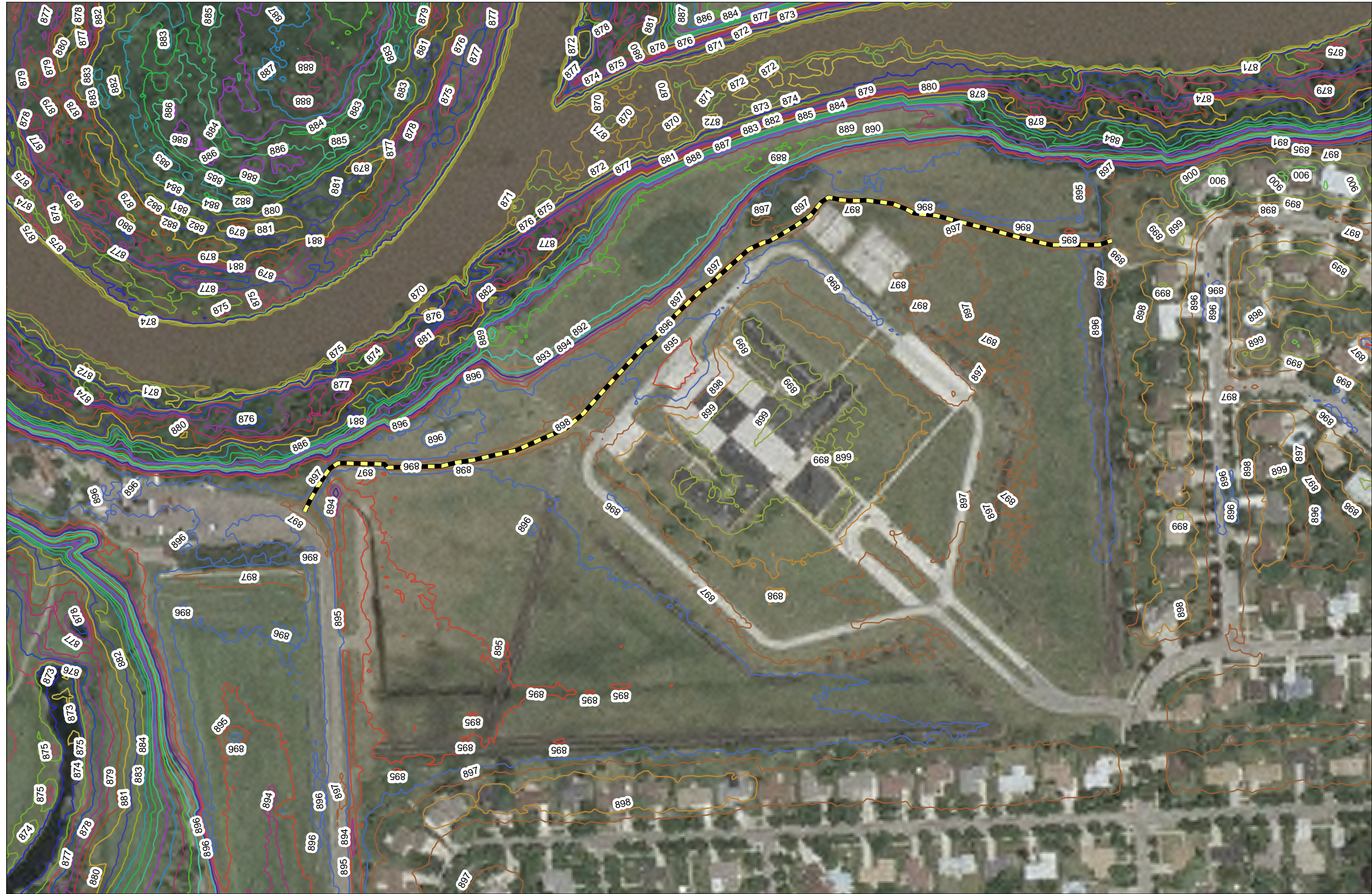


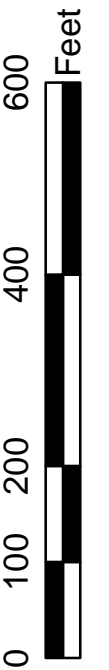
Attachment H-8: Cardinal Muench Seminary Information

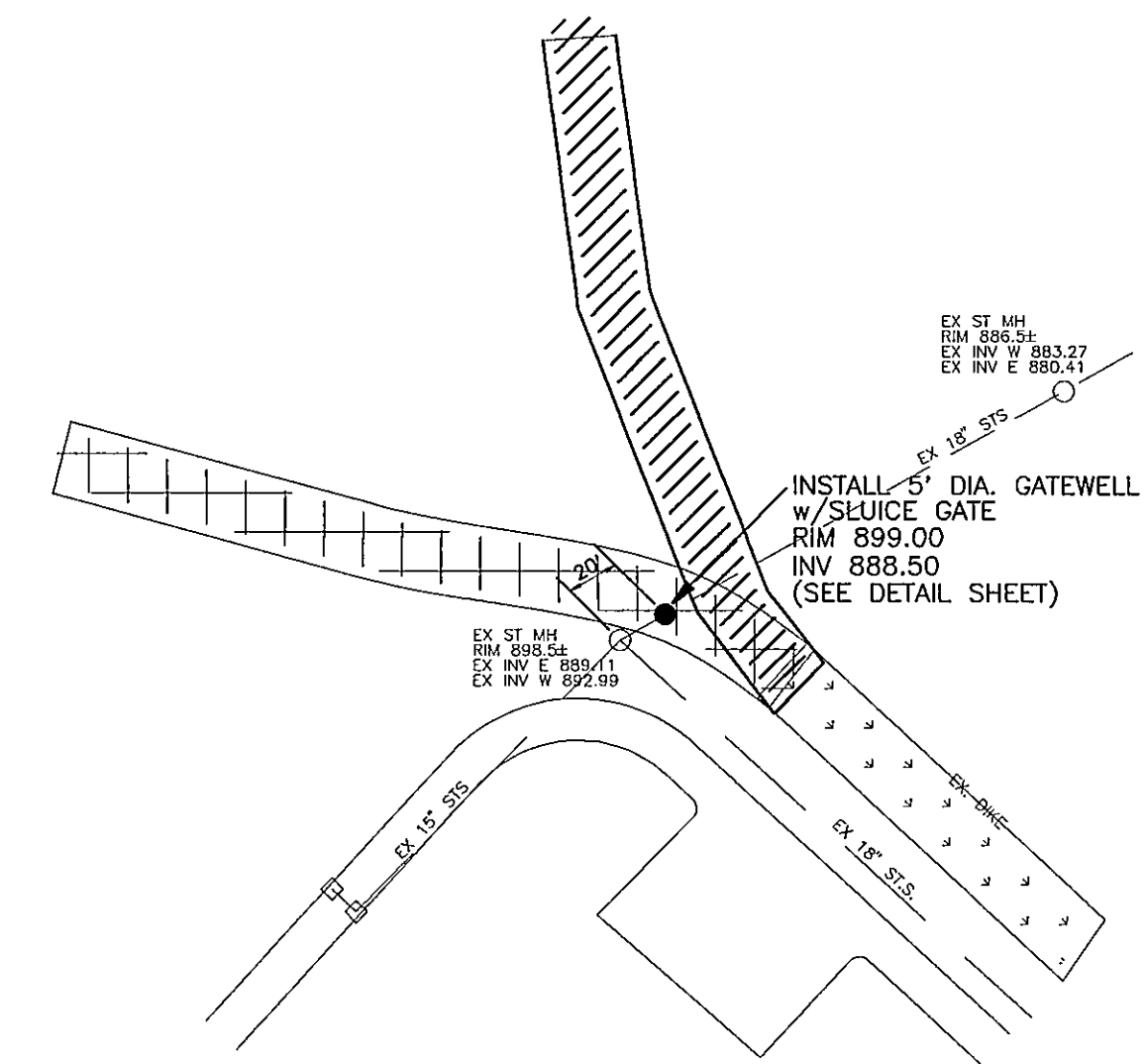
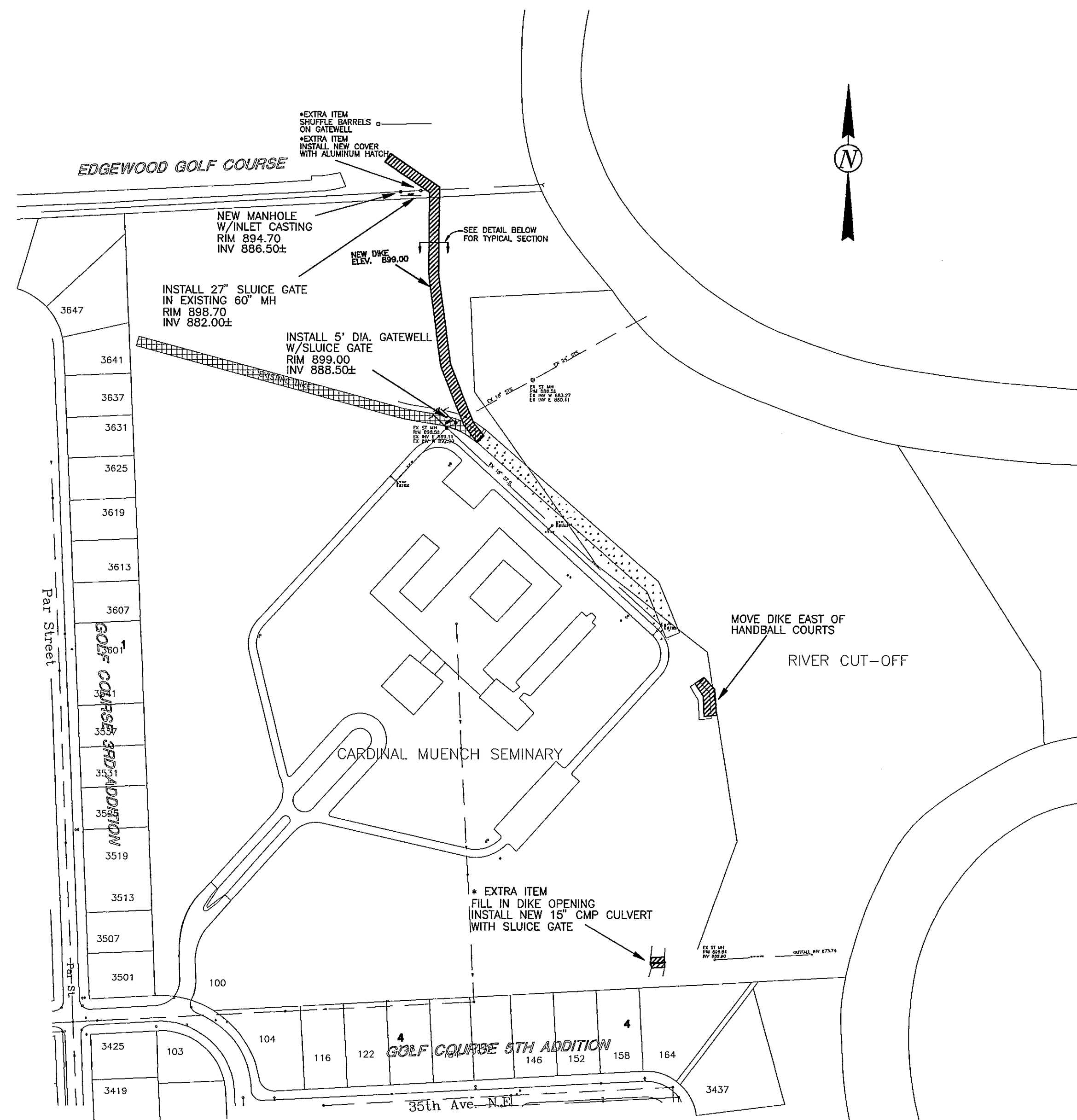


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Cardinal Muench Seminary, 4903 (Fargo)

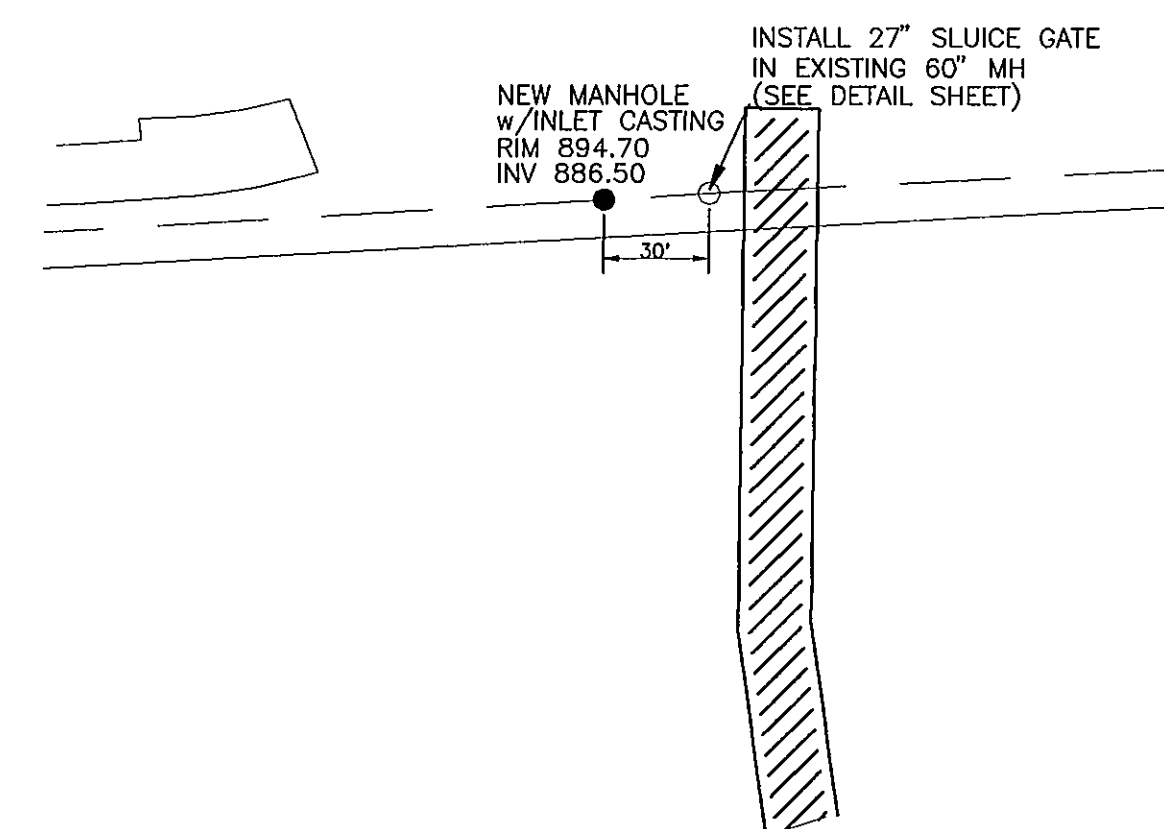
St. Paul District
GEOLOGY
GEO TECHNICAL
US Army Corps
of Engineers®

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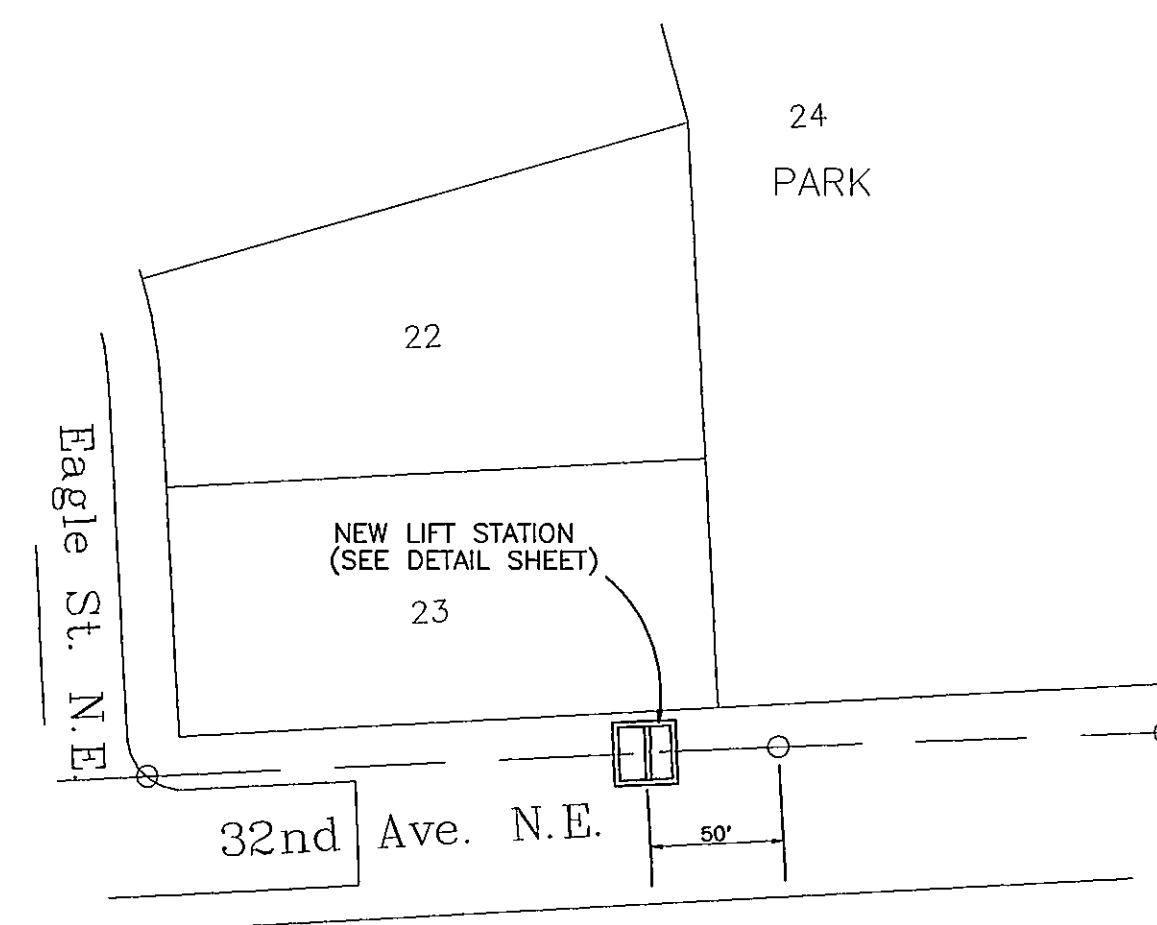




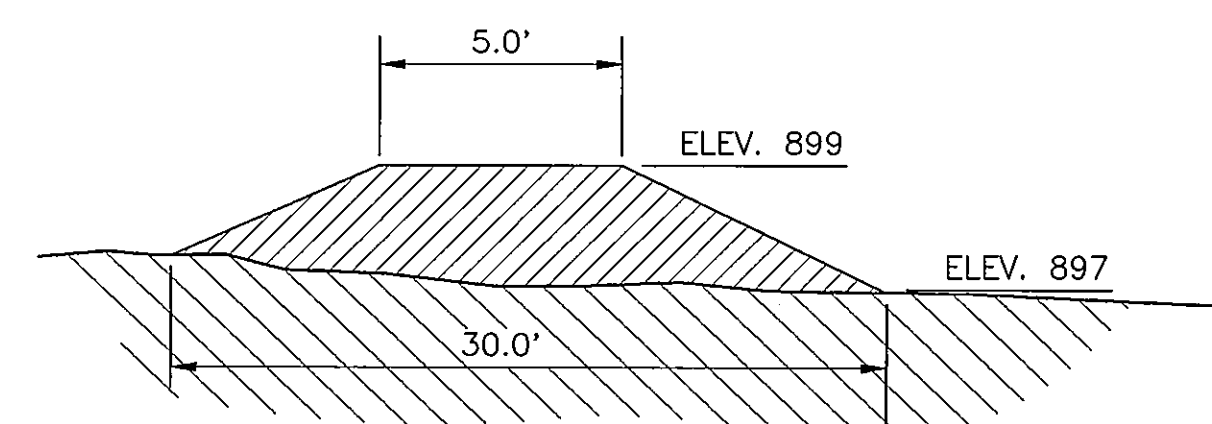
SITE 1: NEW GATEWELL



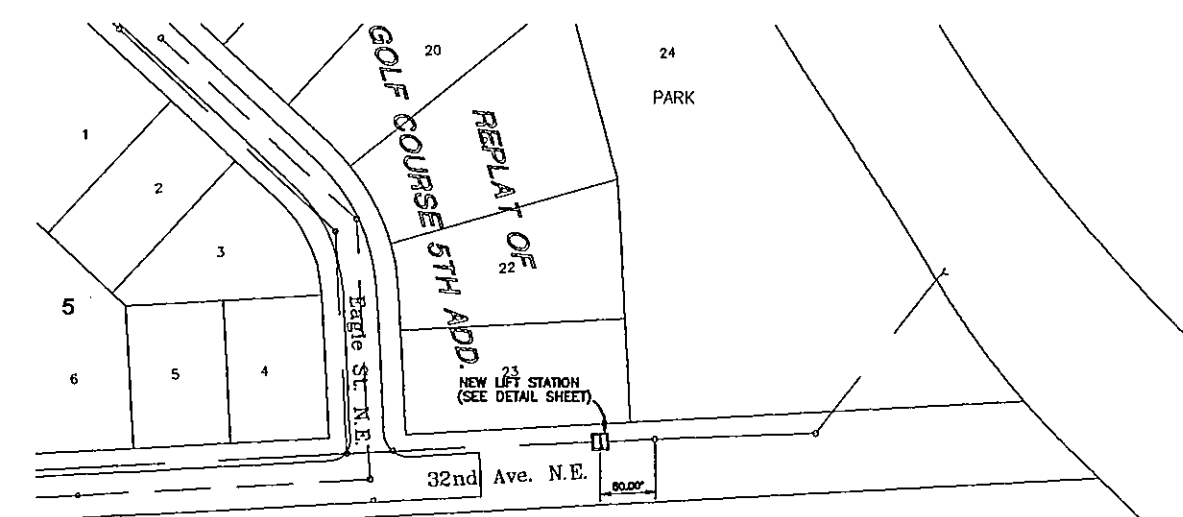
SITE 2: STORM SEWER GATEWELL MODIFICATIONS



SITE 3: NEW LIFT STATION



TYPICAL SECTION



LIFT STATION LOCATION

FINAL PLANS



ENGINEERING DEPT.

STORM SEWER, LIFT STATION
& INCIDENTALS

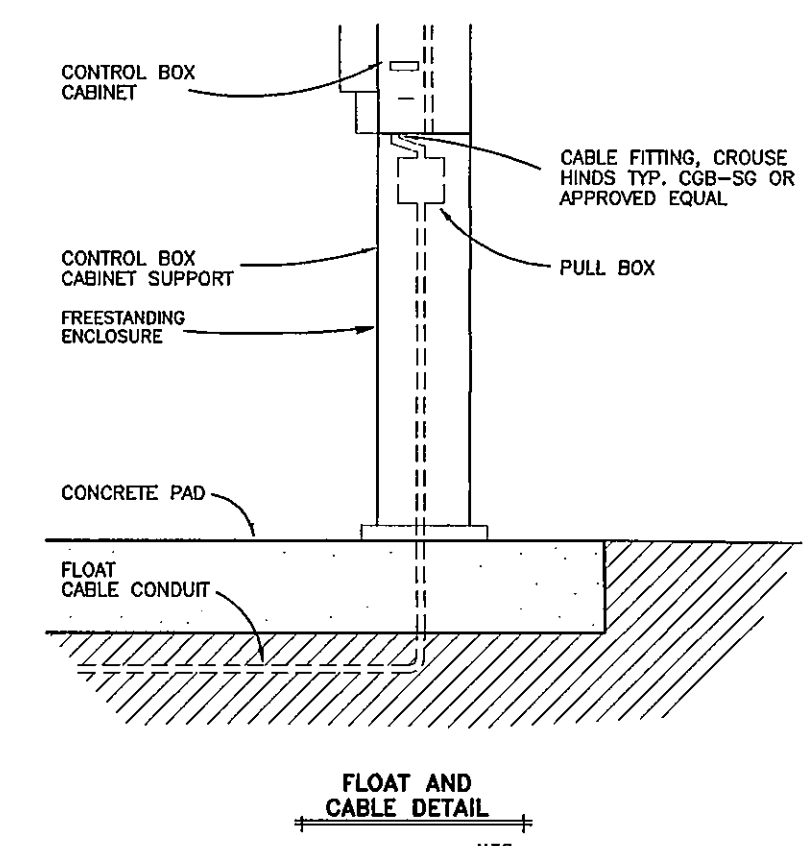
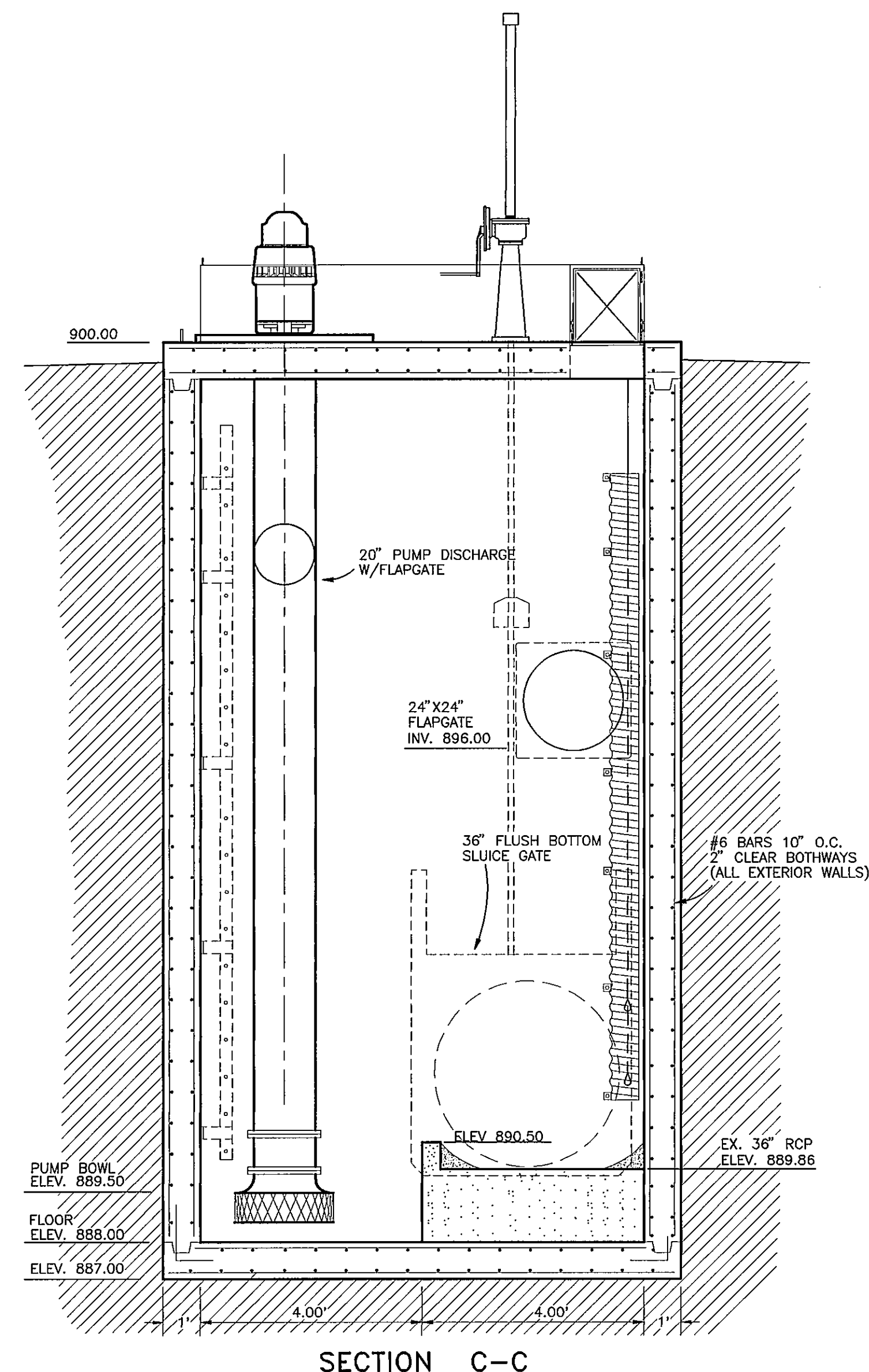
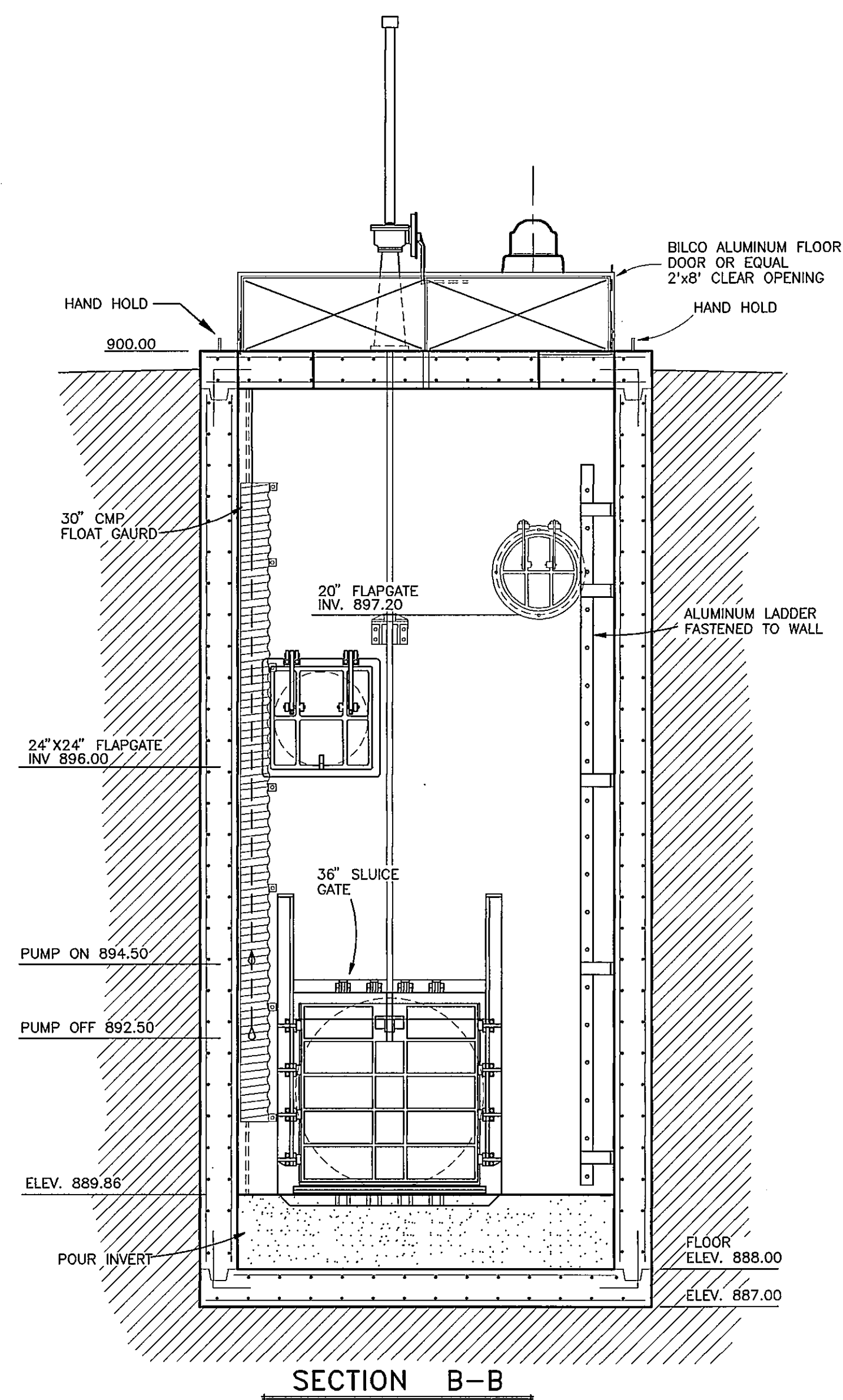
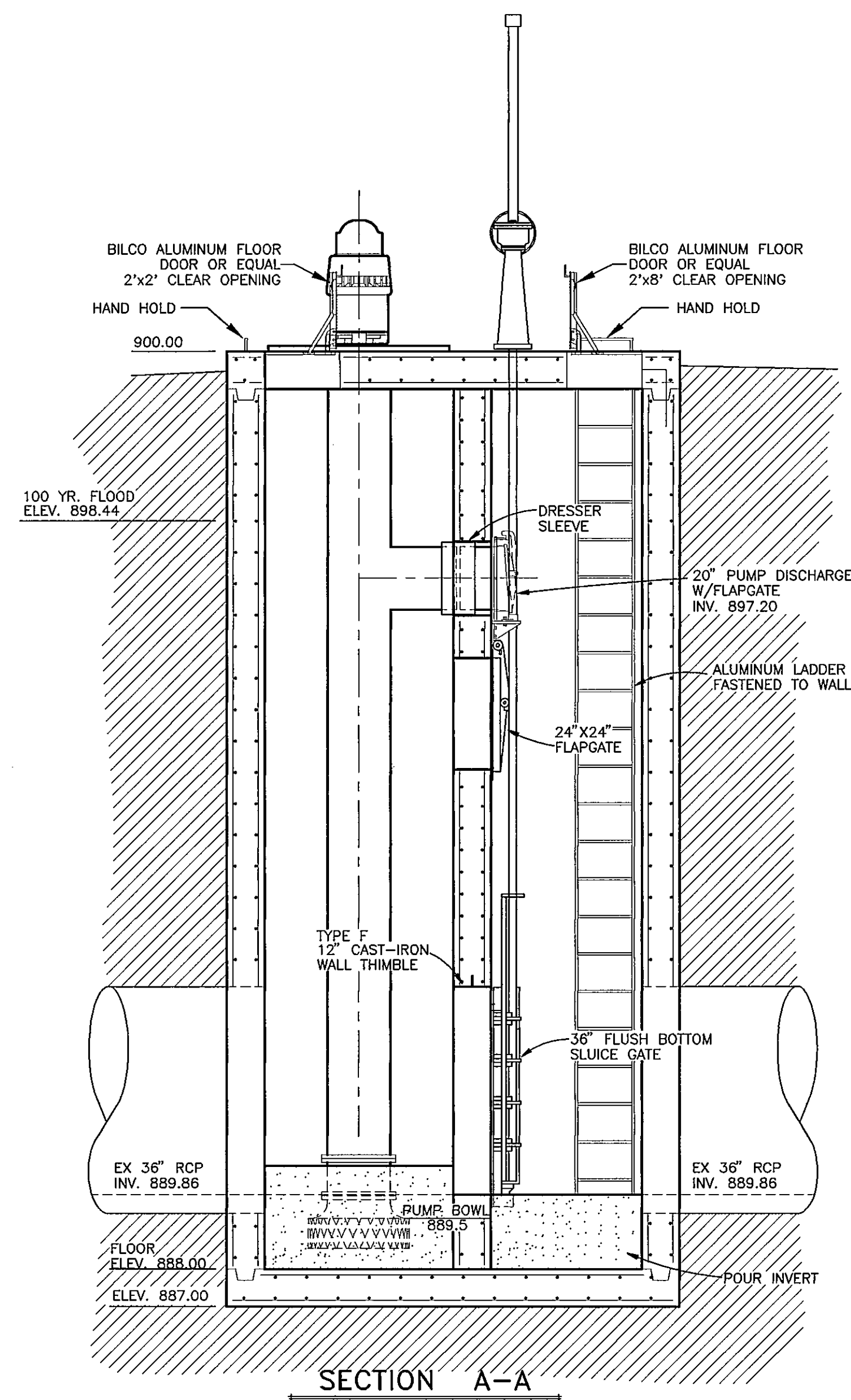
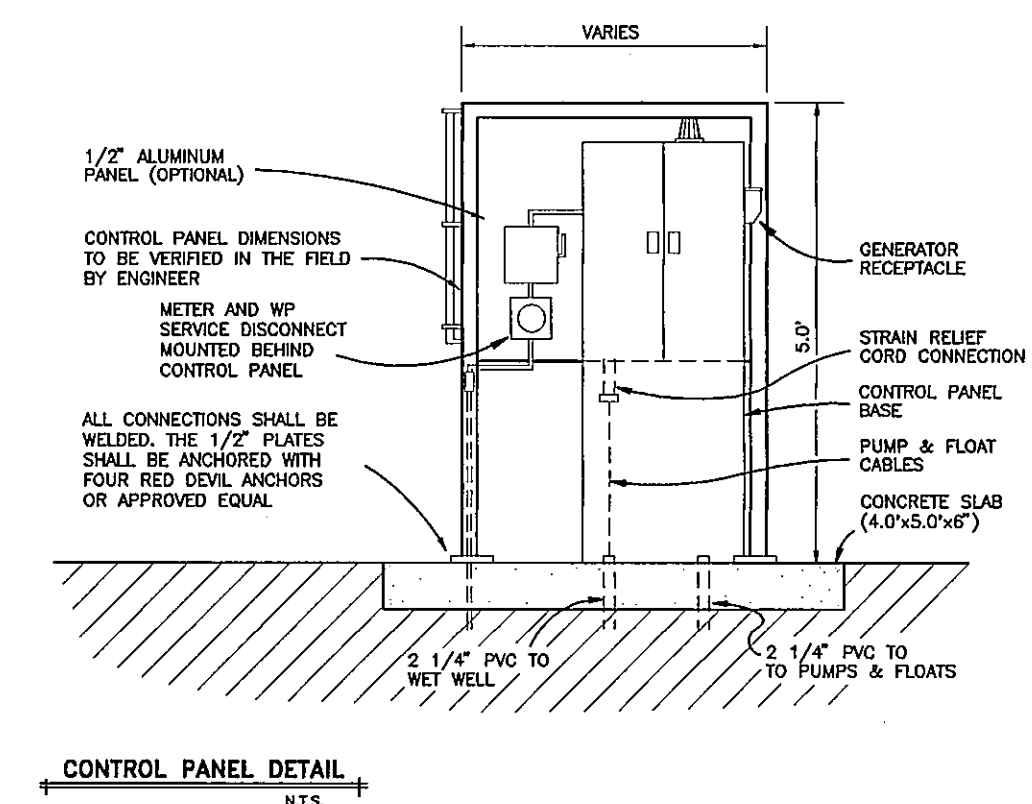
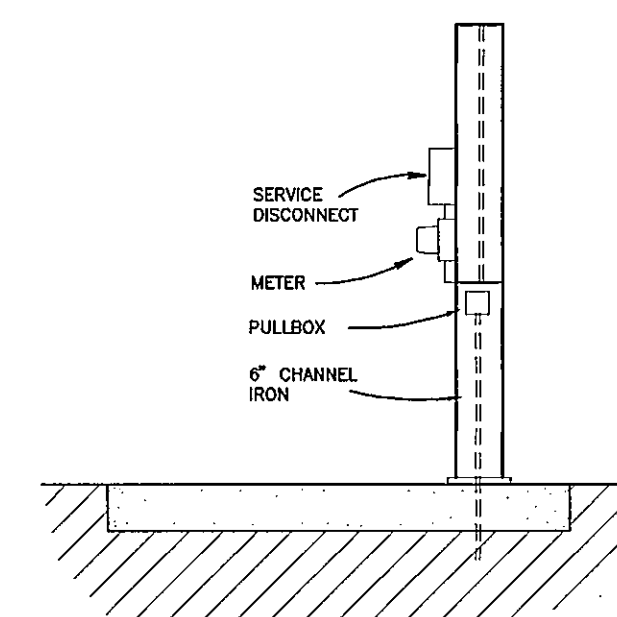
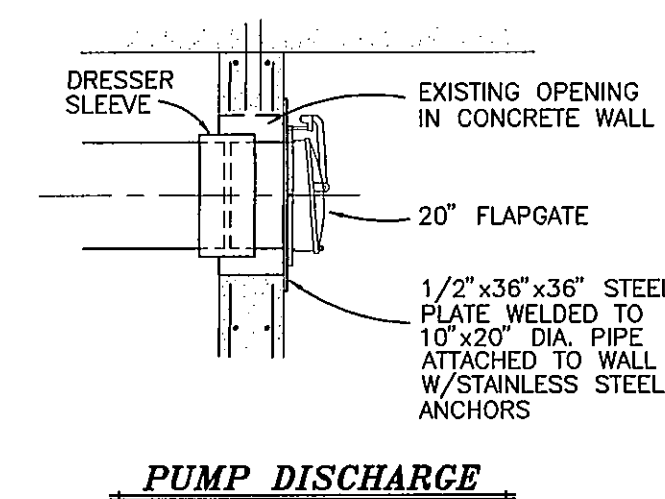
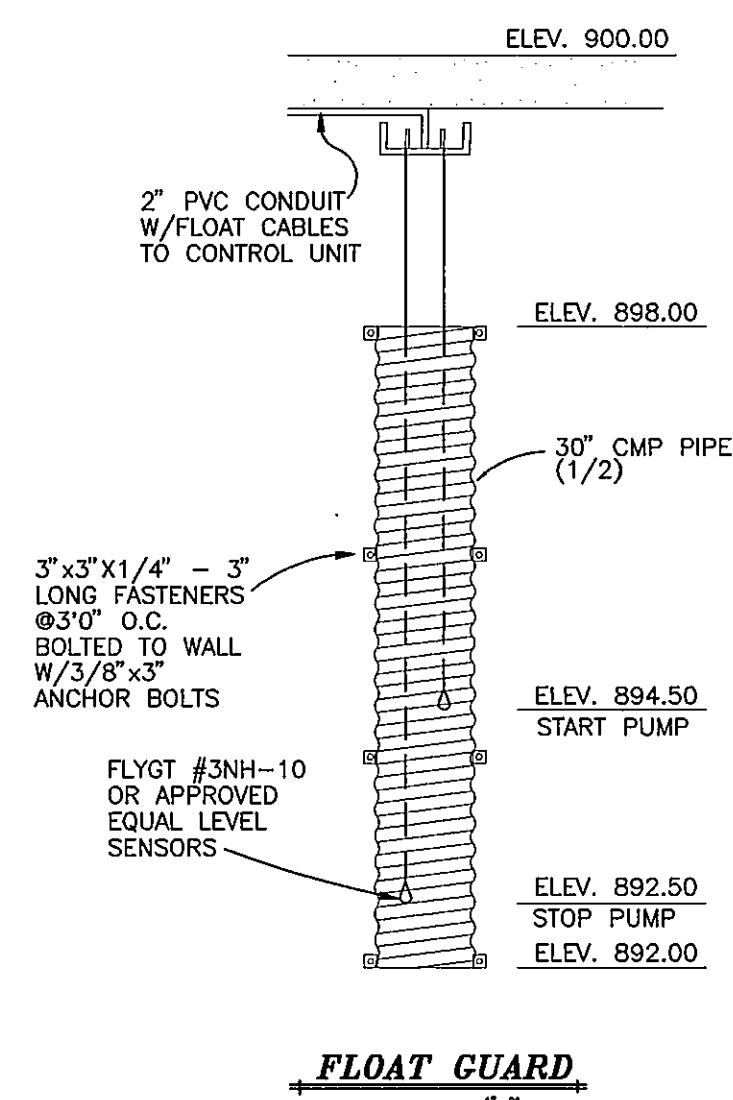
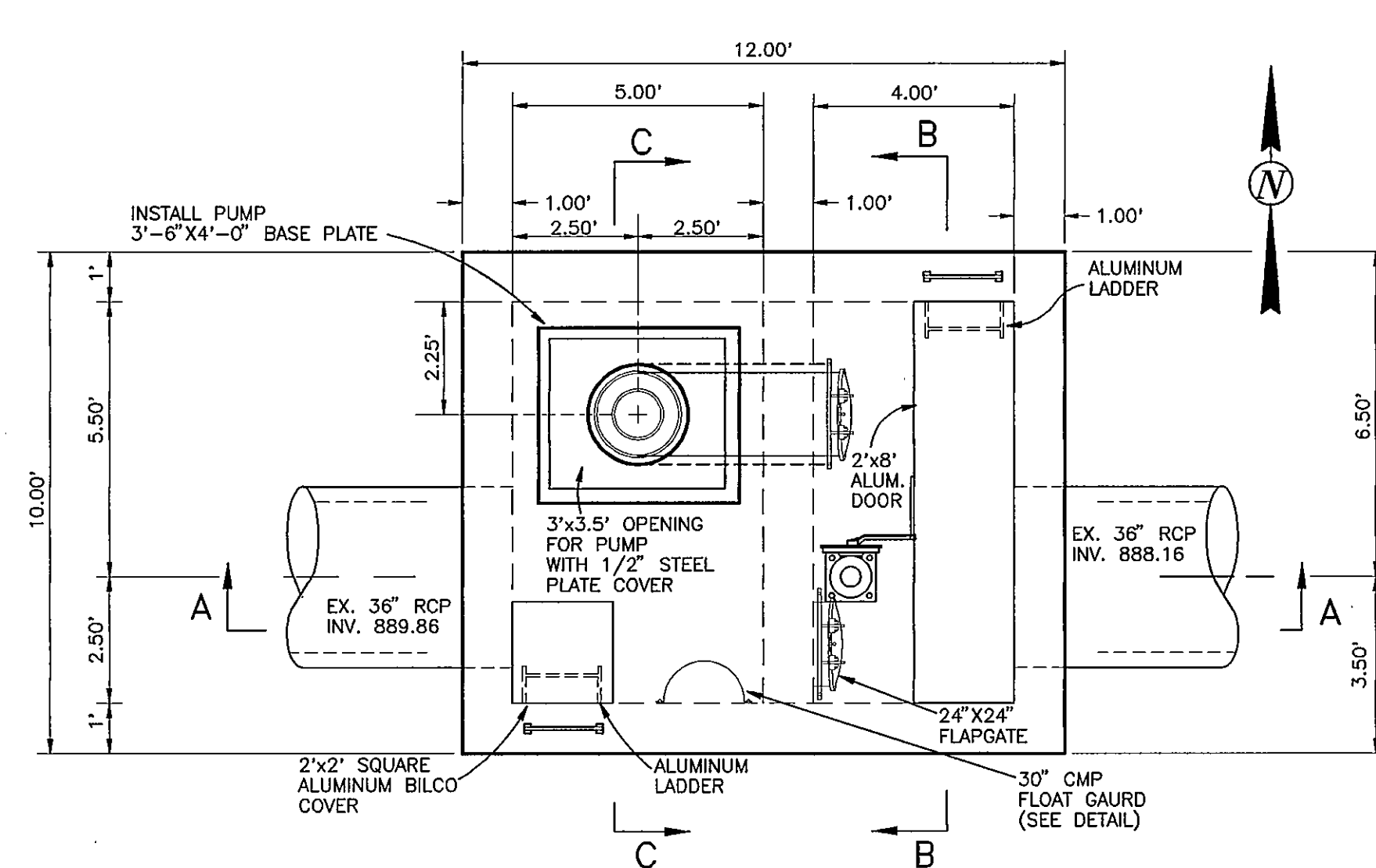
IMPROVEMENT DISTRICT 4903

DRAWN BY: SDK/SWS	SCALE: NO SCALE
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CHECKED BY: SWS	DATE: AUG., 1999
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APPROVED BY: <i>YMB</i>	SHEET 3 OF 5
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ALL ELEVATIONS ARE BASED ON
THE CITY OF FARGO DATUM.
(UNLESS NOTED OTHERWISE)

FINAL PLANS



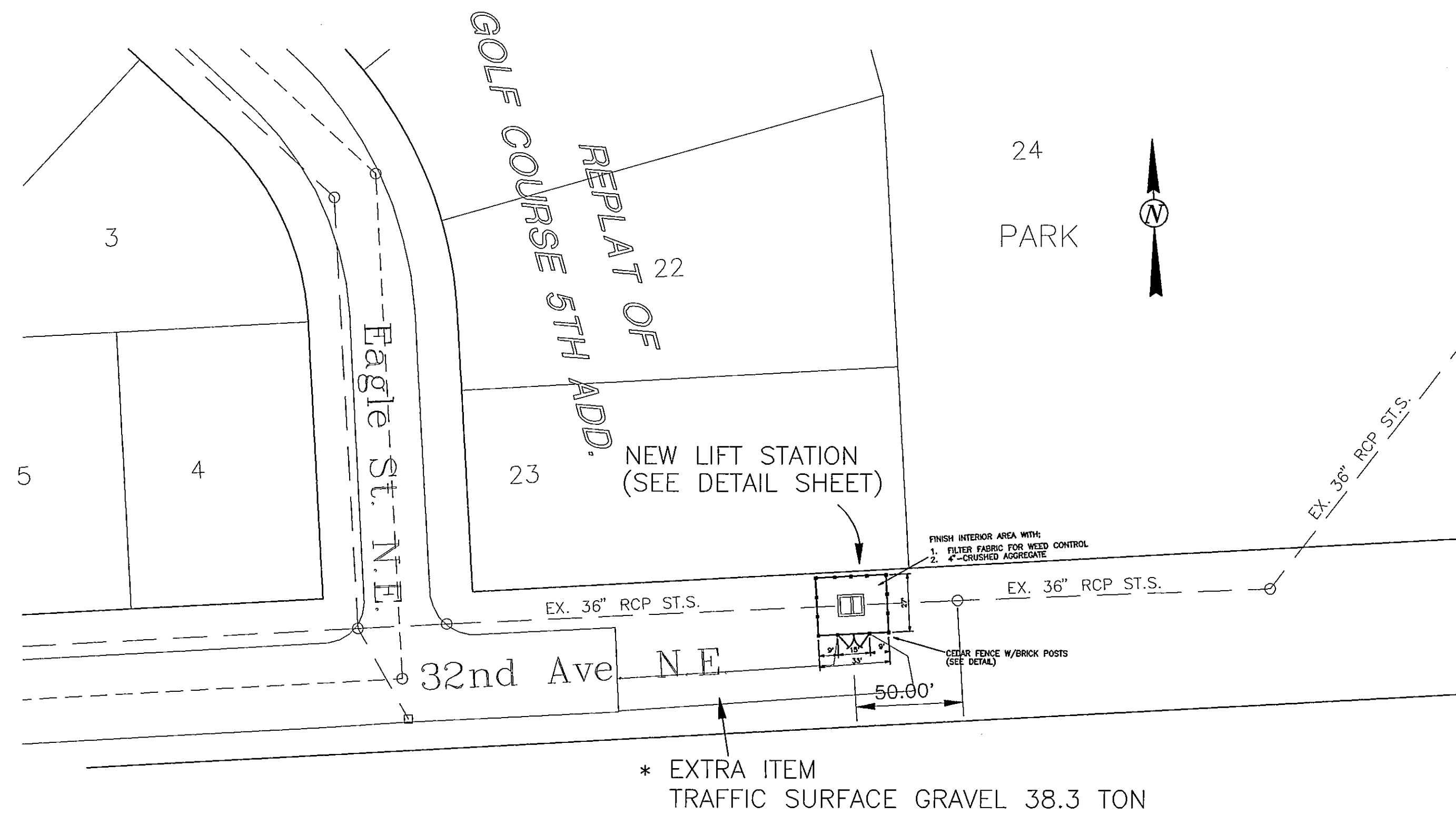
STORM SEWER, LIFT STATION
& INCIDENTALS

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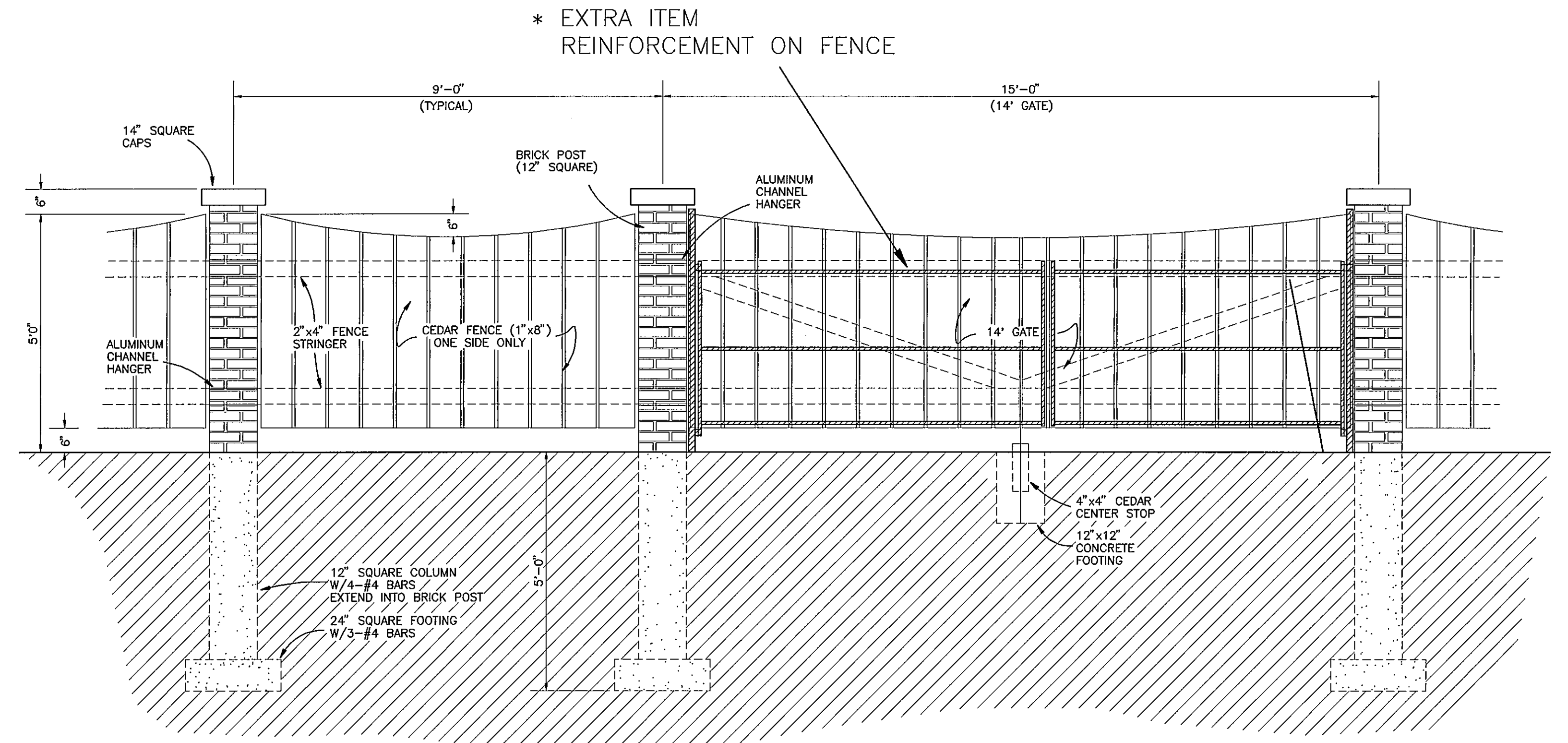
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APPROVED BY: <i>MB</i>	SHEET 4 OF 5
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ENGINEERING DEPT.	FILE NAME: PROJFIN\4900\4903\4903_F4
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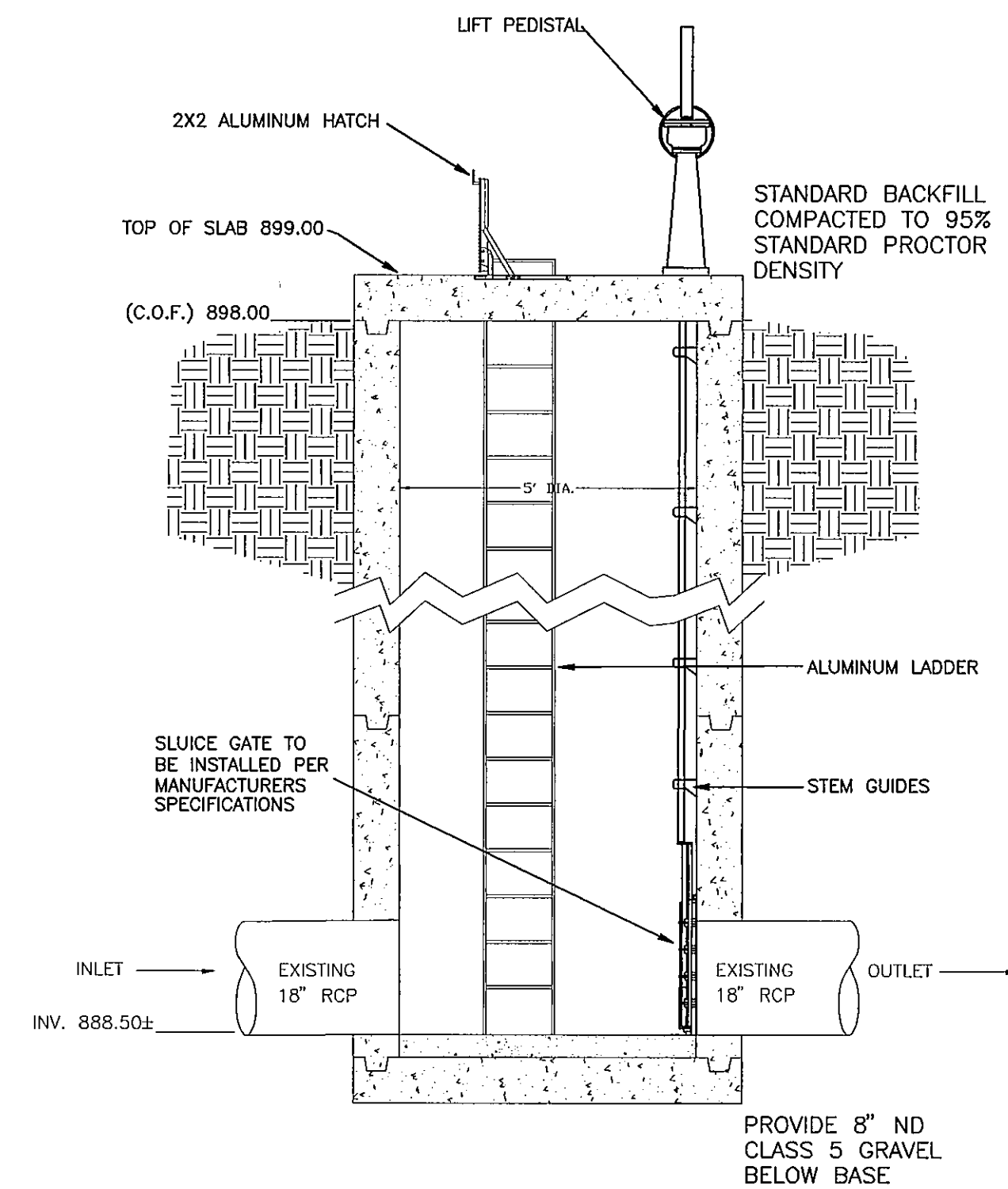


LIFT STATION FENCE LOCATION

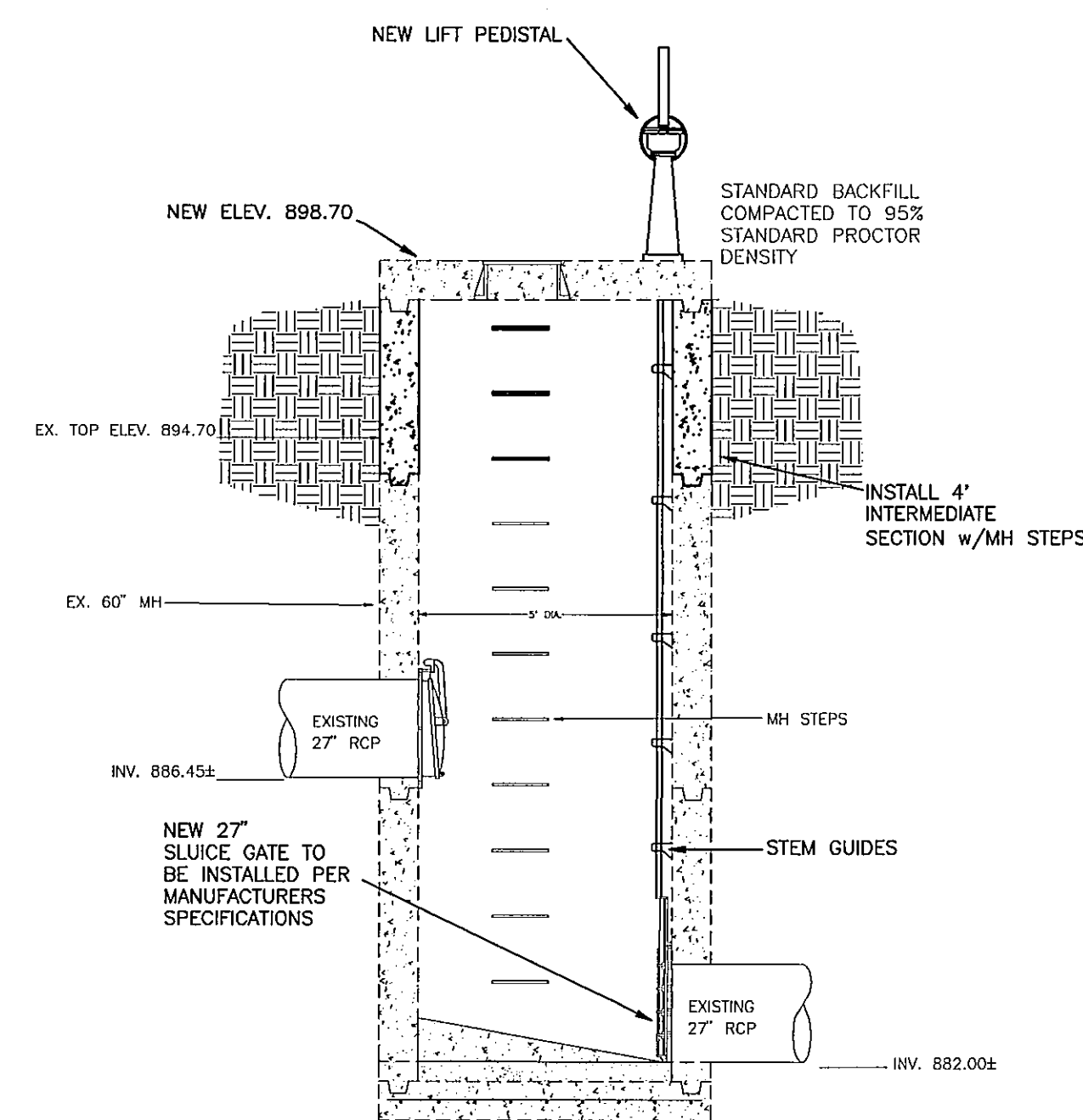


- NOTES:
1. POSTS ARE 12"x12" SQUARE W/14" SQUARE CAPS
FILL ALL CAVITIES WITH CONCRETE
 2. EXTEND FOOTING STEEL TO TOP OF BRICK POSTS,
EXTEND ALUMINUM CHANNEL HANGERS THROUGH
BRICK POSTS TO ATTACH FENCE STRINGERS
 3. HORIZONTAL STRINGERS ARE 2"x4", ATTACHED TO
ALUMINUM HANGERS, VERTICALS BOARDS ARE 1"x8"
CEDAR
 4. DOUBLE SWING 14" GATE WITH HORIZONTAL AND
VERTICAL BOLT LATCHES
 5. WOOD FENCE TO BE SEALED WITH NATURAL CEDAR
SEALER FINISH

FENCE DETAIL




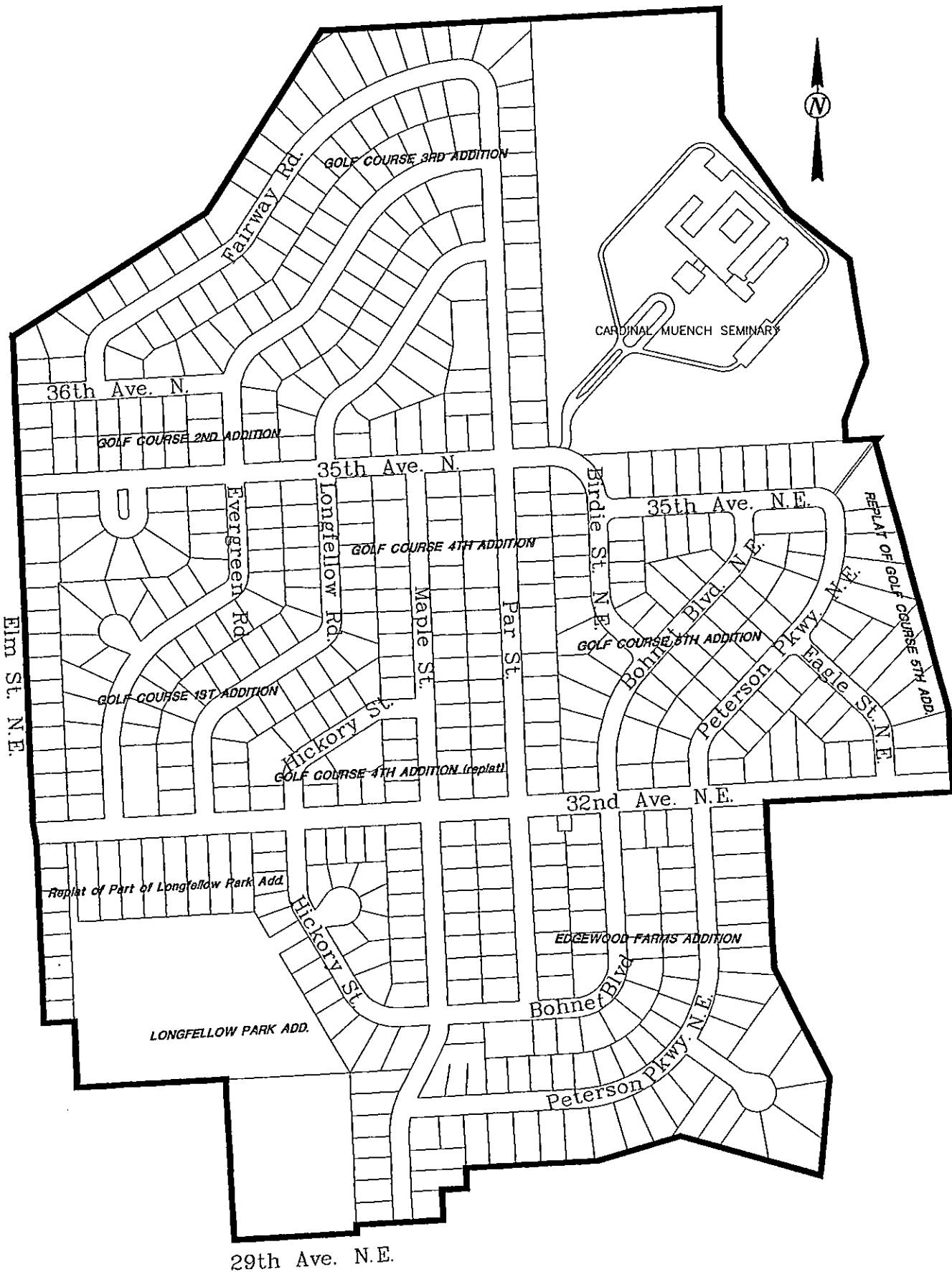
GATEWELL DETAIL
(NO SCALE)



STORM SEWER GATEWELL
MODIFICATIONS DETAIL
(NO SCALE)

FINAL PLANS

CITY OF Fargo  ENGINEERING DEPT.	STORM SEWER, LIFT STATION & INCIDENTALS	
	IMPROVEMENT DISTRICT 4903	
	DRAWN BY: SDK/SWS	SCALE: NOT TO SCALE
	CHECKED BY: SWS	DATE: AUG., 1999
	APPROVED BY: <i>MB</i>	SHEET 5 OF 5
FILE NAME: \4900\4903\4903_F5		



IMPROVEMENT DISTRICT NO. 4903 FINAL PLANS

Materials List		
Improvement District # 4903		
Item #	Item Description	Quantity / Unit
Storm Sewer		
2664	Rem. & Repl. 7" Asph. Pvm.	1100.00 SY
2945	Traffic Control	1.00 LS
3101	15" Storm Sewer w/Gravel Backfill	810.00 LF
3104	24" Storm Swr w/Gravel Backfill	370.00 LF
3450	A Inlet	1.00 EA
3500	Std. Storm Sewer MH	7.00 EA
3654	Rem. & Repl. Curb & Gutter	100.00 LF
4603	Hydroseed with Mulch	1.00 ACRE
3752	Sodding	200.00 SY
3800	Storm Sewer Lift Station	1.00 LS
3902	Storm Sewer Gatewell	1.00 EA
3803	Storm Sewer Gatewell Modifications	1.00 LS
4004	Embankment	500.00 CY

SPECIAL INSTRUCTIONS FOR BIDDERS IMPROVEMENT DISTRICT NO. 4903

1. SPECIFICATION

The City of Fargo Standard Specifications for Construction of Public Utilities (revised 4-87) along with these Special Instructions shall govern the construction of the project.

2. COMPLETION

Functional completion of the lift station and sluice gate vaults will be March 15, 1999. All work shall be complete by June 15, 1999.

3. PROJECT COORDINATION

The Contractor with the aid of the engineer shall coordinate and schedule with other contractors, utilities companies, and City of Fargo personnel that may be working during the same time period. Co-operation is required to ensure timely accomplishment of all phases of construction.

The City of Fargo will not be responsible for additional cost resulting from delays caused by work on adjacent projects. The engineer shall be the sole judge if any problems or disputes evolve between contractors.

4. MANHOLE & INLET CASTING TYPES

A. Storm Manholes

- | | |
|--|---|
| 1) Regular manhole castings required - | 6 |
| 2) Inlet castings required - | 1 |
| Total - | 7 |

B. Approved Casting Types

- 1) Regular manhole castings - Municipal #304 or equal.
- 2) Inlet castings - Municipal #413 or equal.

5. BID PURPOSE ITEMS

The following items are listed for bid purposes to be used only as directed by the engineer.

- A. A Inlet
- B. Remove and Replace Concrete Curb & Gutter
- C. Sodding

6. STORM SEWER PIPE

All storm sewer pipe shall be RCP. All costs associated with tapping into existing storm manholes shall be incidental to the project. RCP pipe shall be provided with a Hamilton Kent Super Seal Gasket or approved equal.

7. TRENCH BACKFILL

The trench backfill under paving or driveways will be N.D. Class 5 or equal. Hydraulic plate compactor will be used to compact the material to 90% of proctor density from pipe elevation to 3 feet below subgrade and 95% in the last 3 feet. The backfill material will be incidental to the price bid for the storm sewer. A box or shoring will be used to protect the storm sewer pipe installers. Standard earth backfill compacted to 90% Standard Proctor Density is required for boulevard trenches.

8. EXCESS EXCAVATION

All clean excess excavation will be used as embankment for the seminary dike. All costs of this item to be incidental to other items. Unsuitable backfill shall be disposed of by the contractor.

9. PAVEMENT REMOVAL & REPLACEMENT

Approximate pavement removal is shown on the plans. In general, the trench width will be limited to six feet. Concrete curb & gutter will be removed only as directed by the engineer. The remaining curb shall be preserved during storm sewer installation.

Payment will be on a square yard price for pavement removal and replacement.

10. STORM SEWER/PAVING CONSTRUCTION

The contractor shall have a period of thirty calendar days per block to complete the installation of the storm sewer, street section, driveways and sidewalks. In the event the contract fails to meet this condition, he shall be subject to a \$500 per calendar day penalty until such time as access is provided to the affected block.

11. TRAFFIC CONTROL

Traffic control shall conform to Part VI of the MUTCD - Standards for Work Zone Traffic Control, latest edition. All signs and barricades are to have amber flashing lights.

Traffic control devices shall be installed at the inception of construction operations. These control devices shall be properly maintained during the time such special conditions exist. They shall remain in place only as long as they are needed and shall be immediately removed thereafter. The lump sum bid for traffic control shall include all costs for signs and barricades and lights, and all traffic maintenance costs.

Proposed detour signing shall be submitted to the engineer for approval prior to the closing of a particular street.

The contractor shall provide a qualified watch person who is knowledgeable in traffic control operations.

- A. Watch persons shall be provided to patrol the project to assure that the traffic control devices are properly placed in accordance with the traffic control plans and standards. The project shall be patrolled daily at least once during daylight before 10 AM and at least once during darkness after 10 PM, including weekends and days when no work is in progress.

The watch person shall complete the traffic control devices daily checklist for every patrol and turn it in to the project inspector or engineer. A check list form is attached as part of these specifications.

The contractor shall provide written documentation to the engineer of the watch person's hours and activities.

The contractor shall immediately assist the watch person, whenever needed, to correct conditions that cause erratic traffic movement, unexpected braking, etc., and erect, repair, replace, or relocate the required traffic control devices. Emergency assistance shall be provided to motorists, when needed, due to roadway conditions. Suspension of watch person service may be permitted during periods of authorized suspension or after substantial completion of the work, provided the job site is in safe condition.

- B. All costs associated with the above requirements shall be included in the price bid for the traffic control items.

12. EMBANKMENT

Relocation of the flood protective earthen dike in Cardinal Muench Seminary will be paid for on a cubic yard basis for embankment. Existing topsoil shall be stripped prior to construction and replaced after completion of embankment work. The cost bid for embankment shall include all costs associated with topsoil handling, hauling, placement, compaction (in 6" lifts) to 95% Standard Proctor Density, grading, etc.

13. HYDROSEEDING WITH MULCH

Part 1 Description of work

This work shall consist of the placing of topsoil and seeding the boulevards and yards after demolition and backfill are completed as designated by the engineer.

Part 2 Material

2.1. Topsoil

All topsoil shall be natural, friable soil which has produced heavy growths of crops, grass, or other vegetation and shall be reasonably free from subsoil, brush, objectionable weeds, or other litter, and shall be free from clay lumps, stones or other objects larger than one inch diameter, stumps roots, any toxic substance, or any other material which may be harmful to plant growth or may be a hindrance to grading, planting and maintenance operations.

2.2. Seed

All seed shall be labeled in accordance with U.S. Department of Agriculture rules and regulations under the federal seed act in effect on the date of the invitation to bids. Seed shall be furnished in sealed containers unless exception is granted by the engineer. Damaged, wet, or moldy seed will not be accepted. All seed shall meet the minimum requirements for purity and germination. No purity or germination tolerance will be allowed. Weed seed shall not exceed 0.5% of the total mixture, and seed shall contain no noxious weed seed of the state from which seed is to be shipped. The seed mixture shall conform to the following:

A. Ditches and side slopes:

Kind of Seed	Percentage by Weight	Purity	Germination
Brome Grass	40%	85%	85%
Western Wheat	20%	90%	75%
Crested Wheat	20%	90%	85%
Rye Grass	20%	99%	90%

Rate of seeding = 70 pounds per acre

B. Parks, boulevards, private property, built-up areas:

Kind of Seed	Percentage by Weight	Purity	Germination
Glade Kentucky Blue	30%	90%	80%
Park Kentucky Blue	30%	90%	80%
Creeping Red Fescue	30%	90%	80%
Annual Rye	10%	95%	90%

Rate of seeding = 220 pounds per acre (5 pounds per 1,000 sq. Ft.)

2.3. Fertilizer

Fertilizer shall be a commercial product and shall be 10-10-10 at an application rate of 220 pounds per acre (5 pounds per 1,000 sq. Ft.). The mulch shall have an approved locking and bonding agent to ensure long lasting stabilization and reduce erosion potential. The tackifier shall be installed as per the manufacturer's recommendation.

2.4. Mulch (if specified)

A. Hydro Mulch

Hydro mulch shall be a wood cellulose fiber (not sawdust) and be applied at a rate of 2000 pounds per acre (45 pounds per 1,000 sq. Ft.). The mulch shall have an approved locking and bonding agent to ensure long lasting stabilization and reduce erosion potential. The tackifier shall be installed as per the manufacturer's recommendation.

Part 3 Construction

3.1 Preparation of Areas to be Seeded

Prior to or during grading and tillage operations, the ground surface shall be cleared of all stumps, brush, roots, stones larger than 2 inches in diameter, wire or other material that may hinder seeding and maintenance operations.

Any accumulated material shall be disposed of by the contractor at no additional cost to the city.

3.2. Placing Topsoil

Immediately prior to placing the topsoil, the subgrade shall be loosened by discing or scarifying to a depth of two inches to provide for the bonding of the topsoil to the subgrade. Topsoil shall be placed on all areas to meet prescribed grades or to provide soil capable of supporting grass growth. Topsoil shall be dumped in uniformly spaced piles and spread evenly to a minimum depth of six inches over the prescribed area. Topsoil shall be graded as shown on the plans or as directed by the engineer. Irregularities or low spots resulting from the topsoiling or other operations shall be corrected in order to prevent pockets where water may stand. Topsoil will not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to the proposed plantings or the grading operation.

3.3. Planting Seed

Prior to planting of the seed, fertilizer will be applied at the specified rate. All seeding shall be done when the ground is open, not frozen or covered with snow, except as otherwise directed in writing by the engineer. Seed shall be mechanically sown using approved equipment. Application rates shall be checked periodically using approved methods. When drill seeding, provisions shall be made to assure overlap. If inspection shows strips have been missed or skipped, these areas will be reseeded at no additional cost. When delays in operation or unfavorable weather conditions indicate that seeding will not have satisfactory results, the work will be stopped by the engineer.

A. Broadcast seeding

Seed shall be broadcast by approved sowing equipment or by hand for small areas. Seed shall be uniformly distributed with half the seed being sown with the sower moving in one direction, and the remaining half sown at right angles to the first sowing. Seed shall be covered to an average depth of 1/2 inch by a harrow or approved device. Broadcast seeding will not be allowed in windy conditions.

B. Drill seeding

Drill seeding shall be done with grass drills not more than 6 inches apart and shall be sown uniformly over the designated area. Seed shall be sown to an average depth of 1/2 inch.

C. Slurry seeding

The seed, water and mulch (if specified) shall be combined and kept under constant agitation so that a slurry of seed, mulch (if required) and fertilizer and water can be applied hydraulically to the areas to be seed. The equipment used will provide sufficient agitation to insure a uniform mixture of the ingredients throughout the application. The application quantity of slurry mixture. Uniform coverage and seeding ratios shall be obtained and spot checks of seed distribution may be made by random plating of paper plates on areas to be seeded. After seeding, comparison of actual count of seed on the plates will verify the uniformity and application rate of the seeding distribution. No hydroseeding will be allowed after September 15th.

3.4. Mulching (if required)

3.4.1. Hydro Mulch

Hydro mulch will be applied with the slurry seed application and when completed shall provide uniform coverage while allowing percolation of water to the seedbed.

3.5. Cleanup

All areas shall be cleaned of areas that may hinder maintenance operations and all paved areas over which hauling operations were conducted shall be cleaned of soil or other material which may have been brought upon the surface.

3.6. Protection of Seeded Area

The contractor shall protect all planted areas from traffic or other use by placing warning signs or erecting barricades immediately after seeding is complete. Any damage that may occur prior to final acceptance by the engineer shall be repaired to re-establish the conditions or grade of the soil prior to the damage and shall then be re-planted by the contractor at no additional cost.

3.7. Watering of Seeded Area

Immediately upon completion of the seeding, the seeded areas shall be given one watering. Sufficient water to moisten the seedbed to a depth of 2 inches shall be applied. Water shall be applied in a manner that provides uniform coverage and prevents erosion and damage to the final surface. The contractor shall provide additional watering as necessary for a two week period to insure germination of the seed unless dormant seeding after October 15 is approved by the Engineer.

14. SOD

Areas requiring sod shall have a minimum of 4-inches of black dirt installed prior to the placing of the sod. The existing sod shall be removed using a method that provides a straight edge of sufficient depth to allow the new sod to be placed abutting that edge, without the presence of an unsightly ridge, and provide a smooth continuous appearance. In areas where excessive settlement has occurred or the existing boulevard is blocking drainage, the contractor will be required to remove the existing sod and level the area by filling with black dirt, or by removing excess dirt prior to placing the new sod. The contractor shall water the sod daily for a period of two weeks from the date of installation.

15. CONDITIONS AT SITE

Bidders must satisfy themselves by personal investigation and by such other means as they may think necessary or desirable as to the location of and the conditions affecting the proposed work and as to the cost thereof. No information derived from maps, plans, specifications, profiles, or drawings, or from the engineer of his own assistants, or any other official, employee, or agent of the owner will relieve the contractor from any risk or from fulfilling all of the terms of the contract.

The accuracy of the contractor's interpretation of the facts disclosed by any preliminary investigation that may have been made by the engineer is not guaranteed. The engineer's estimate of quantities given in the statement of work is to be considered as preliminary and approximate only, and to be used only for the purpose of canvassing and comparing bids. The contractor shall not, at any time, make claims to additional payments or considerations on account of any misunderstanding regarding the nature or amount of the work to be done.

16. TEMPORARY BARRICADES

The contractor shall provide temporary barricades where required around his excavations to ensure against anyone accidentally falling into the excavation. Each contractor shall be responsible for his own excavations.

17. LOCATION OF EXISTING UTILITIES

Existing utilities have been shown to direct the contractor's attention to their existence. Such utilities have been plotted from record drawings. THE CONTRACTOR IS CAUTIONED THAT ALL EXISTING UTILITIES MAY NOT BE SHOWN. THE LOCATION OF EXISTING UTILITIES IS NOT GUARANTEED, AND THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND PROTECTION OF THE EXISTING UTILITIES.

THE CONTRACTOR, BEFORE COMMENCING ANY EXCAVATION OR CONSTRUCTION, SHALL FIND OUT THE LOCATION AND SEEK AD IN LOCATING ALL PUBLIC AND PRIVATE UTILITIES.

18. STREETS TO BE KEPT CLEAN

Streets and highways that are being used by the contractor and his forces to and from, as well as in the project site, shall be kept clean and dust-free at all times for the duration of the project and at project completion. Only methods approved by the engineer shall be used to keep the streets clean.

19. FINAL CLEANING UP

Before final acceptance, the streets, right-of-ways, and all areas occupied as used by the contractor with the work, shall be cleaned of all rubbish, excess materials, temporary structures and equipment; and all parts of the work shall be left in an acceptable condition.

20. LIQUIDATED DAMAGES

The contractor should note that new liquidated damages schedule has been adopted by the City Commission. Listed below is the new schedule, and an explanation of requests for time extension that shall be followed on this project.

ORIGINAL CONTRACT AMOUNT		SUBSTANTIAL COMPLETION	FINAL COMPLETION
From	To	Calendar Day	30%
\$0	\$50,000	\$150	\$45
\$50,000	\$100,000	\$250	\$75
\$100,000	\$500,000	\$400	\$120
\$500,000	\$1,000,000	\$500	\$150
\$1,000,000	\$2,000,000	\$600	\$180
\$2,000,000	---	\$900	\$270

The designated completion date will be strictly enforced. Changes in project scope or conditions may warrant time extension.

Substantial completion is defined as completion of all pay items by designated completion date. Final completion is defined as completion of all clean-up items of final inspection. Final completion must be within 30 days of specified completion date. Liquidated damages of 30% will be charged per calendar day for failure to complete all clean-up items within specified period.

Request for Additional Time

At any time before expiration of the original or extended contract time, a written request may be made to the engineer for additional time to complete the contract. The request shall be supported by adequate documentation stating the reasons and basis for the request. The engineer's determination will consider to what extent the delays were caused by conditions beyond the contractor's control that may be offset by time lost due to the failure to diligently prosecute the work or to other conditions within the contractor's control. A plea that insufficient time was specified is not valid reason for a time extension. A time extension will not be considered for inclement weather or for the time period from November 15 to April 15.

21. FINAL INSPECTION

After the contractor has completed the installation of the public facility and any clean-up items, he shall make a written request to the engineer for a final inspection. Upon receipt of this request, the engineer will set a date and time for the final inspection. The final inspection request form is attached as part of these specifications.

22. STORM SEWER GATEWELL

The new gatewell will be installed on an existing 18" RCP storm sewer. The storm sewer gatewell will be paid for at the unit price bid and shall include connecting the existing storm sewer to the new gatewell and all labor, materials and incidentals necessary to make a complete connection as well as the access cover, sluiceway, lift assembly, stem, aluminum ladder and other incidentals necessary for a complete operational gatewell.

23. SLUICE GATES

A. Sluice Gate 18", 27" and 36"

The sluice gates shall be a cast iron, heavy-duty Waterman Series 3000 sluice gate as manufactured by Waterman Industries of Texas or approved equal. The gate shall be a rising stem spigot back sluice gate with guide rail mounted to the frame to form a guide slot.

The guiderail and head piece, whether it be separate or integrally cast with frame, shall be designed to withstand the total thrust of the gate slide due to water pressure and wedging action.

The frame, slide, and guide rolls shall be cast iron. Seating faces shall be naval bronze. Wedges and stem block shall be manganese bronze. All fasteners shall be stainless steel.

At the contractor's option, a stainless steel sluice gate equal to a Fontaine Series 50 may be installed.

B. Lift Assembly

The lift assembly shall be of the hand-operated pedestal type. The hand crank shall be sized to lift the gate against 25-feet of head with a maximum of 40 pounds of effort. The pedestal shall have a bronze lifting nut, ball bearings, or tempered roller bearings above the below the flange and shall have machined friction surfaces. The hand crank shall be provided with a free turning bronze sleeve on the handle and shall be readily removable from the pedestal. A steel pipe stem cover and the lift assembly shall be firmly attached to the intake structure during all modes of operation.

C. Stem

The gates shall be equipped with a self-contained stainless steel rising stem capable of safely withstanding the stresses induced by the lift mechanism without buckling or permanent distortion. Fully adjustable stem guides shall be installed as necessary to maintain stem alignment, yet free enough to permit easy operation. They shall be spaced in accordance with the manufacturer's recommendations.

<p>D. The cost for the 18" sluice gate and appurtenances shall be incidental to the bid price for storm sewer gatewell. The cost for the 27" gate and appurtenances shall be incidental to the bid price for storm sewer gatewell modifications. The cost for the 36" sluice gate and appurtenances shall be incidental to the bid price for the storm lift station.</p> <p>24. ALUMINUM HATCH</p> <p>Floor access doors shall be Type K as manufactured by the Bilco Co., New Haven, Connecticut or approved equal.</p> <p>The clear opening shall be: 2' x 2' for gatewell 2' x 8' for lift station</p> <p>Frame shall be 1/4" extruded aluminum with built-in neoprene cushion and with strap anchors bolted to exterior and locking lug for padlock. Door leaf shall be 1/4" aluminum diamond plate reinforced with aluminum stiffeners as required. Cast steel hinges shall be bolted to underside and pivot on torsion bars that counterbalance the door for easy operation. The door shall open to 90° and lock automatically in that position. A vinyl grip handle shall be provided to release the cover for closing. Doors shall be mill finish, with bituminous coating to be applied to frame exterior by manufacturer. Installation shall be in accordance with manufacturer's instructions. Manufacturer shall guarantee against defects in material or workmanship for a period of five years.</p> <p>The cost for the 2' x 2' aluminum hatch shall be incidental to the bid price for storm sewer gatewell. The cost for the 2' x 8' aluminum hatch shall be incidental to the bid price for the storm lift station.</p>	<p>35. PRIME CONTRACTOR SUPERVISION</p> <p>The prime contractor shall furnish a full-time superintendent who is acceptable to the engineer. The superintendent shall have authority to make decisions on behalf of the contractor and shall coordinate and control all subcontractors.</p> <p>36. TESTING</p> <p>The City shall provide all testing as called for in the specifications. The amount of testing shall be as called for in the specifications or as judged to be necessary by the engineer.</p> <p>37. UTILITIES</p> <p>All utilities used by the contractor in the prosecution of the work shall be paid for by the contractor.</p> <p>38. MANUFACTURED EQUIPMENT – PRIOR APPROVAL</p> <p>In these specifications and on accompanying drawings, there are specified and shown certain equipment and materials deemed most suitable for the service anticipated. This is not done, however, to eliminate others equally as good and efficient. REQUESTS FOR SUBSTITUTION OF EQUIPMENT AND MATERIALS MUST BE RECEIVED BY THE ENGINEER TEN DAYS PRIOR TO BIDDING. Request shall include all product data and performance data indicating compliance with the appropriate specification. An addendum will be issued listing approved substitutions ten days prior to the bid opening. The awarding of the contract shall constitute a contractual obligation to furnish approved materials and equipment suitable for the specified service.</p>	<p>bronze bearings. An oil seal shall be furnished just below the top discharge bowl bearing to keep the shaft enclosing tube flooded with oil at all times. The suction bell bearing shall be grease packed and be protected by a sand collar. The impeller shall be made of ASTM B594 Alloy 836 bronze and shall be fastened to the pump shaft in such a manner as to be readily removable and to be able to prevent damage from reverse rotation. The pump shaft shall be stainless steel and be of sufficient diameter to transmit the required horsepower. The pump bowl is used with oil lubricated column and shall have a drain port to drain the water that passes through the pump bowl bearing. The stator shall be stainless steel lined to improve wearability.</p> <p>d) Column Assembly</p> <p>The column and discharge elbow shall support the driver and direct the flow of water from the pump bowl to the horizontal (underground) discharge pipe located as specified. It should consist of elbow, stuffing box assembly, column sections, line shaft and couplings, bearings, shaft enclosing tube, and tube tension device.</p> <p>The discharge elbow shall be connected to the discharge force main with a dresser coupling and the discharge elbow and force main shall be adequately tied across the dresser coupling with tie bolts to prevent separation.</p> <p>e) Line Shaft</p> <p>The line shaft shall be ASTM A109 grade 1045 steel ground and polished. It shall be of ample size to operate the without distortion or vibration and shall be capable of carrying the maximum horsepower that may be generated by the motor. Shaft couplings shall have left handed threads to tighten during pump operation.</p> <p>The shaft enclosing tube shall be of sufficient diameter to provide adequate lubrication under any operating conditions.</p> <p>The line shaft bearings which serve as couplings for the shaft tubing shall be spaced at each tubing length to maintain alignment of pump shaft and prevent excessive vibration. They shall be of bronze alloy, machined, threaded, and grooved for proper lubrication.</p>	<p>be furnished by the successful manufacturer for approval by the engineer prior to producing said controls.</p> <p>The manufacturer shall provide the services of a qualified engineer to inspect installation, supervise final adjustment and instruct the operator in the use and maintenance of this equipment.</p> <p>The manufacturer shall warrant the control system to be free of defective material and workmanship for a period of one year from the date of final acceptance. Any service necessary to replace material shall be performed without cost of the owner during this one year period.</p> <p>2) Electrical Service</p> <p>Northern States Power Company will supply power to the main circuit breaker and supply the current transformers for metering. The meter socket shall be supplied by the contractor, as approved by NSP. The contractor shall supply a complete 200 amp, 480-volt, 3-phase, 4-wire electrical service. Rigid steel conduit will be required from the transformer. The pump electrical power and house electrical shall be separated out of the main breaker to allow work on one without affecting the other.</p> <p>3) Level Regulators</p> <p>Furnish a complete level control system consisting of three (one spare) Flygt Model EXH-10 liquid level regulators or equal. Each regulator shall consist of a conical part and a hemispherical bottom covered with a chemical and sewage resistance hard PVC casing, all enclosing an eccentrically fitted float lead weight to keep the regulator in the correct attitude and a shockproof mercury switch. Consolidated Electric Model LS float with weight kit is an approved float alternate.</p> <p>4) Controls</p> <p>Furnish and install one automatic control center as manufactured by "Consolidated Electric" or equal. Panel shall be 240/480 volts, 3 phase, 60 cycle, NEMA SST construction equipment totally self contained on a free standing pedestal with the following:</p> <p>a) Circuit breaker for pump – E frame or better.</p> <p>b) NEMA rated magnetic--line starter for the pump, with proper size replaceable quick trip heater element and overload protection. G.E. Square D or Westinghouse.</p> <p>c) Overload reset pushbutton extended through the dead front door. (Heavy Duty).</p> <p>d) Oil tight hand-off-automatic selector switch for pump, operable through the dead front door.</p> <p>e) Solid State liquid level regulator controller assembly with automatic pump operation, with float test switches and LED's. Electro-mechanical devices are not acceptable.</p> <p>f) One 24-volt control circuit transformer with circuit breaker primary connection and fused secondary circuit. Switch unit shall have transient protection built into module. Unit shall be U.L. approved.</p> <p>g) Box clamp type terminals shall be provided for connection for the electric power supply wires, pump circuit wires, and liquid level regulator cables, and shall be coded.</p> <p>h) Condensation protective heater, (element to be replaceable without tools).</p> <p>i) GFI Type Simplex receptacle, 120 volts, A.C., 15 Amps.</p> <p>j) Pump running time meter, reading in hours of operation.</p> <p>k) Plastic coated wiring diagram on inner door.</p> <p>l) Control center shall be mounted as shown on the plans.</p> <p>m) Transfer switch for emergency generator shall be supplied by the control panel manufacturer and installed on panel. Receptacle shall be Appellon ACR 6044 RS and mounted on side of panel.</p>	<p>3) Mortar Materials</p> <p>a) Aggregate: ASTM C-144.</p> <p>b) Water shall be clean and free from injurious amounts of acids, alkalis, organic materials, or other deleterious substances.</p> <p>c) Portland cement: ASTM C-150, Type 1.</p> <p>d) Hydrated lime: ASTM C-207, Type S.</p> <p>e) Water proofing admixtures: "Hydralite Plus" by A.C. Horn Company, "Hydracide Powder" by Sonneborn or approved equal.</p> <p>4) Masonry cleaner "Sureklean" by Process Solvent Co., Inc., Kansas City, Kansas, or "S-C Clean No. 88" by S-C Industries, Minneapolis, Minnesota or approved equal.</p> <p>C. Execution</p> <p>1) Protect all masonry work from the elements and from staining or damage of every description during the progress of the work.</p> <p>2) All workmanship shall be first class.</p> <p>3) All masonry work damaged or disfigured during the progress of the work shall be replaced in the entirety at the expense of the contractor.</p> <p>4) Mortar and Mortar Mixing</p> <p>a) Prepare mortar only with materials specified and in conformance with ASTM C-270. Type M, S, or N mortar may be used in masonry work.</p> <p>b) Aggregate: 2 1/4 to 3 times the volume of cement and lime used; measured in damp, loose condition.</p> <p>c) Use waterproofing admixture as per manufacturer's recommendations.</p> <p>d) Materials that have partially set shall not be retempered or used. Frozen, caked or lumpy materials shall not be used. Mixers and boxes shall be thoroughly cleaned of oil set or hardened mortar before the materials for a new batch are loaded.</p> <p>e) All sand and water for mixing shall be heated to at least 80° F. when daily temperatures are below 50° F. Antifreeze admixtures shall not be used.</p> <p>5) Laying up Masonry</p> <p>a) All masonry shall be held up by skilled mechanics and in accordance with the following specifications and applicable trade practices and as indicated on the drawings.</p> <p>b) Masonry joints: All concrete block shall have concave joints. Joints shall be tooled concave at exposed masonry. All face brick joints shall have raked joint.</p> <p>c) The horizontal and vertical joints shall be filled solid without any voids in the walls. All masonry shall be laid in a full bed of mortar.</p> <p>d) Cold weather requirements</p> <p>i) When air temperatures fall below 40° F., provide suitable work area enclosures; heat to raise temperatures above 40° F., for minimum of 48 hours. Temperatures of masonry materials when laid shall be above 40° F.</p> <p>ii) Temperature of mortar when heated shall be between 70° F. minimum to 120° F. maximum.</p> <p>iii) Temperature of sand and mixing water shall be 70° F. minimum to 180° F. maximum.</p> <p>6) Clean as required, the exterior masonry. Mixing and application of cleaner shall be in accordance with the block manufacturer's recommendations. Under no circumstances shall muriatic acid be allowed on the site without the written approval of the architect/engineer.</p>
<p>25. STORM SEWER GATEWELL MODIFICATIONS</p> <p>The modifications to the existing gatewell shall consist of installing a 27-inch sluiceway and removing the existing gatewell cover, installing a 4 foot riser extension (60" barrel) and replacing the cover.</p> <p>26. SHOP DRAWINGS & PRODUCT DATA</p> <p>Four sets of shop drawings and product data, checked and stamped approved by the contractor, shall be submitted to the engineer for his evaluation and approval of all pipe, pumps, motors, valves, controls, appurtenances and other materials and equipment required in the specifications prior to installation and construction. Any unique construction techniques shall be submitted, along with drawings, to the engineer for approval.</p> <p>Shop drawings and product data shall include manufacturer's or fabricator's drawings, diagrams, schedules, operational curves, test reports, catalog cuts, or descriptive data showing model, size, type, weight, ratings, and other information as may be considered necessary to determine compliance with the contract documents and to enable proper installation of the material or equipment being proposed.</p> <p>In submitting shop drawings, product data, and samples, the contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the work and the contract documents.</p>	<p>39. MATERIAL & EQUIPMENT APPROVAL</p> <p>Approval for items of material and equipment proposed to be furnished by the contractor shall be based on the engineer's review of shop drawings, product data, and other submittals required in the specifications. Any material or equipment determined not to be in accordance with the specification requirements may be rejected during the review process. Once approval has been granted, changes such as model, type, manufacturer, etc. shall not be allowed except where considered beneficial to the City by the engineer.</p> <p>The review of submittal will be general, and shall not be construed:</p> <p>A. As permitting any departure from the contract requirements; or</p> <p>B. As relieving the contractor of the responsibility for any errors or omissions in the submittals or the materials or equipment including details, dimensions, functions, quantities, ratings, etc.</p> <p>C. As disallowing subsequent rejections upon the finding of defects of departures from the contract documents after the material or equipment has been installed.</p> <p>Submittals covering any equipment or material which, because of standard shop practice or for other reasons, is not in accordance with the specification requirements, shall be specifically noted with regard to the points or features of variance. If rejected, the contractor shall provide samples of materials or equipment that he proposes to furnish to assist in determining compliance with the specifications.</p> <p>The contractor shall make all submittals sufficiently in advance of construction requirements to allow ample time for checking, resubmitting, and rechecking without delaying the project. No work shall be fabricated and no material or equipment shall be purchased, except at the contractor's risk, until the submittal has been reviewed and returned.</p>	<p>f) Non-Reverse Ratches</p> <p>Non-reverse ratches shall be required to prevent damage to the pump and motor in event of reverse flow.</p> <p>g) Motor</p> <p>Electric motor as required for the pump. The motor must conform in every respect to the standard specification of NEMA and bear nameplate of manufacturer, with current and operating characteristics noted thereon.</p> <p>The motor must be guaranteed to operate continuously at full-rated load and speed. The motor shall be quiet operating under all load conditions. The electric motor shall be horsepower, 900 RPM to operate on 480-volt, 3 phase, 60-cycle alternating current adequate for operating the connected loads continuously in an ambient temperature of 40° C without exceeding the NEMA standard temperature rises for the motor insulation. The pump shall not overload the motor at any operating range of head on pump curve. The motor windings shall have moisture resistant insulation.</p> <p>Motor enclosures shall be totally enclosed weather-proof with grease lubricated ball bearings.</p> <p>h) Suitability & Approval</p> <p>All parts of the pumping unit shall be suitably designed for the service required. It shall operate without excessive vibration or cavitation of the propeller. The pump and motor shall be new and the standard product of a reputable manufacturer with component parts fabricated on a principal of interchangeability to facilitate ready replacement. The pump, as assembled, shall have substantial clearance between the pump and the motor insulation. The pump shall be submitted to the engineer for approval ten days prior to the opening of bids. There shall be furnished all necessary wrenches or specially needed tools.</p>	<p>E. Measurement and Payment</p> <p>The total price bid for construction of the storm lift station complete, shall cover all work and materials including well, covers, gates, ladders, pump controls, fence enclosure and miscellaneous, and as shown on the contract drawings and/or required by the specifications and other contract documents, or reasonably inferred thereby. All costs in connection with the work, including the furnishing of materials, equipment, tools, and appurtenances; providing all construction plant, equipment and tools; and performing all necessary labor, coordination, supervision and management to fully complete the work shall be included in the lump sum and unit prices named in the Bid Proposal. No item that is required by the contract documents for the proper and successful completion of the work will be paid for outside of, or in addition to, the amounts and prices submitted in the Bid Proposal. All work not specifically set forth as a pay item in the Bid Proposal shall be considered included in the lump sum bid.</p> <p>F. Topsoil Spreading</p> <p>Topsoil strippings from the project area shall be used as directed by the engineer to finish grade the area upon completion of the lift station installation. Topsoil spreading shall be considered incidental to the work.</p> <p>G. Seeding</p> <p>The area impacted by lift station construction shall be seeded after topsoil spreading has been completed.</p>	<p>Concrete Footings</p> <p>The concrete footings shall be of the size shown on the plans and reinforced as indicated. The concrete for the footings shall have a minimum compression strength of 3000 psi at 28 days.</p> <p>Payment</p> <p>Payment shall be incidental to lift station costs.</p>
<p>27. SCOPE OF WORK</p> <p>The contractor shall include in his proposal all of the work outlined on the drawings and/or included in the specifications, and shall include the cost of all the work and any and all trades whether or not indicated on the drawings or mentioned in the specifications, but which may be required to complete the project, ready for operations in a satisfactory manner.</p> <p>28. MATERIAL STORAGE</p> <p>The contractor shall store his materials and equipment in such a place and in such a manner that a minimum of congestion will result. The placing of said equipment shall be subject to the approval of the engineer.</p> <p>29. INTERPRETATION OF DOCUMENTS</p> <p>The contractor shall carefully read the specifications before submitting bids on the work to be done. If any contractor contemplating submitting a bid for the proposed contract documents is in doubt as to the true meaning of any part of the specifications, he may submit to the engineer a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only in writing duly issued, a copy of which will be mailed or delivered to each bidder receiving a copy of the plans and specifications and to such other prospective bidders as have requested that they be furnished with a copy of each.</p> <p>30. DRAWINGS & SPECIFICATIONS OF THE WORK</p> <p>The contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the engineer and to his representatives. All drawings on the work shall bear the engineer's approval.</p> <p>31. INSPECTION OF WORK</p> <p>The engineer and his representatives shall at all times have access to the work wherever it is in preparation or progress, and the contractor shall provide proper facilities for such access and for inspection.</p> <p>In the specifications, the engineer's instructions, laws, ordinances or any public authority requiring any work to be specially tested or approved, the contractor shall give the engineer timely notice of its readiness for inspection, and if the inspection is by another authority than the engineer, of the date fixed for such inspection. Inspections by the engineer shall be promptly made, and where practicable, at the source of supply. If any work should be covered up without approval or consent of the engineer, it must, if required by the engineer, be uncovered for examination at the contractor's expense.</p> <p>Re-examination of questioned work may be ordered by the engineer and if so ordered, the work must be uncovered by the contractor. If such work be found in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If such work be found not in accordance with the contract documents, the contractor shall pay such cost, unless he shall show that the defect in the work was caused by another contractor, and in that event the City shall pay such cost.</p>	<p>40. PROJECT CLOSEOUT</p> <p>All mechanical, electrical, and process equipment shall be operated and tested by the contractor to the satisfaction of the engineer before the facilities are put into operation.</p> <p>During the testing, the contractor shall arrange for the presence of qualified representatives of the manufacturer of all of the various pieces of equipment who shall instruct the owner's personnel in the operation and maintenance of the equipment at no additional cost to the owner.</p> <p>41. RECORD DRAWINGS & MANUALS</p> <p>Prior to final acceptance, the contractor shall provide the engineer with three copies of the descriptive materials, operating and maintenance instructions, spare parts lists, manufacturer's as-built drawings, installation drawings, and the name and location of the nearest supply house stocking spare parts for all equipment provided or installed on the project.</p> <p>42. LIST OF SUPPLIERS & SUBCONTRACTORS</p> <p>The successful bidder shall submit to the engineer a list of equipment suppliers and subcontractors. This list shall be submitted within two weeks after the award of the bids.</p> <p>43. STORM SEWER LIFT STATION</p> <p>A. General</p> <p>The contractor shall furnish and install the storm sewer lift station as described herein and as shown on the plans. The equipment shall form a storm water pump system complete with wetwell structure, ladder, fence enclosure, pump, controls, sluiceways, flapgates, covers and miscellaneous items as contained in the contract documents.</p> <p>B. Flapgates 20"; 24" x 24"</p> <p>1) Scope</p> <p>The work to be done under this specification shall include all labor, tools, materials, and equipment necessary to install the flapgates as shown on the plans.</p> <p>2) Flapgates</p> <p>The flapgates shall be Waterman F-25 or approved equal with bronze hinge bushings. Hinge pins, washers, and keepers shall be stainless steel. Neoprene dovetail seat faces shall be recessed in the covers.</p> <p>C. Storm Water Pump</p> <p>1) Pump and Motor</p> <p>a) Operating Conditions</p> <p>The contractor shall furnish and install one new electric motor driven mixed flow/propeller pump and motor as shown on the plans. The pump must have the necessary characteristics and be properly selected to pump the following capacities and head conditions:</p> <p>Size & Type – 20 inch mixed flow or propeller.</p> <p>Horsepower – 20 Horsepower.</p> <p>RPM – 900</p> <p>Capacity Each – 6500 GPM at 7 feet. TDH.</p> <p>Maximum Head – 10 feet TDH.</p> <p>The motor shall be capable of driving the pump through the full operating range without overloading at any point on the impeller curve. All pumps and motors must receive written approval by the engineer.</p> <p>b) Approved Models</p> <p>1) Simmons P16A or approved equal</p> <p>c) Bowl Assembly</p> <p>The suction bell shall have a flared inlet designed to reduce entrance losses and sufficient number of vanes to support the bearing housing. Both the suction bell and the pump bowl shall have sleeve type</p>	<p>i) Pump Lubrication</p> <p>The pump shall be equipped with a two quart oiler which shall be attached to the motor base with a bracket. The oiler shall be solenoid controlled to provide automatic lubrication when the pump starts operating. The pump manufacturer shall furnish the solenoid controls for the pump, and the solenoid controls shall be mounted on the pump motor in accordance with the wiring diagrams furnished by the pump manufacturer. The suction bell bearing shall be connected with a grease line and Alemite fitting at the base plate.</p> <p>j) Strainer/Vortex Suppressor</p> <p>The pump shall be provided with a stainless steel strainer/vortex suppressor of size and design as recommended by the manufacturer.</p> <p>k) Testing</p> <p>Contractor shall prepare certified, guaranteed performance curves based on shop tests of pumps or of scale models in accordance with procedures as specified by Hydraulic Institute Standards. Performance curves must be certified by a registered professional engineer. Curves shall be submitted for approval twenty days before shipment of equipment.</p> <p>Field Testing – The pump shall be fully tested on water at the site after installation, and at the contractor's expense before acceptance. The driving motor, pump and motor shall be assembled and tested as a unit.</p> <p>l) Pump Warranty</p> <p>The pump manufacturer shall warrant the pump being supplied to the owner against defects in workmanship and materials for a period of one year under normal use, operation and service from the start-up date of the pumping station. The warranty shall be in published form and apply to all similar units. A copy of this warranty shall be placed on file with the owner and engineer prior to approval of the pump.</p> <p>m) Maintenance & Service</p> <p>The local authorized representative shall have his own full time repair service available on 24-hour call. A factory serviceman and service vehicle equipped with tools to make all necessary repairs, as well as component parts required to maintain satisfactory operation of the equipment outlined in these specifications, shall be available if needed without undue delay.</p> <p>n) Start-Up</p> <p>A factory-trained serviceman shall be present at the time when the station is to be put into service and turned over to the owner. He shall instruct the owner in the proper operation and maintenance of the equipment, and submit a written report to the engineer and owner. The factory-trained serviceman shall return to the job site at least once after official start-up to review instructions given previously.</p> <p>a) Painting</p> <p>1) Pump and motor</p> <p>a) Manufacturer's standard surface preparation and high solids epoxy finish and color.</p> <p>b) Provide one quart of touch-up paint – each color.</p> <p>D. Electrical & Controls</p> <p>1) General</p> <p>The contractor shall furnish and install a complete electrical control system. This electrical control system shall be the properly combined product of motor control units, automatic level controls and other related electrical components required to constitute a complete coordinated panel. This system shall be the product of a manufacturer skilled and experienced in systems of this type. A complete wiring diagram, dimensional drawings and description of operation and panel layout shall</p>	<p>44. CEDAR FENCE</p> <p>A. General</p> <p>A cedar fence shall be installed between brick posts around the site as shown on the plans.</p> <p>B. Materials</p> <p>All rough cedar 2 x 4 horizontal stringers 1 x 8 vertical boards</p> <p>C. Installation</p> <p>Attach stringers using carriage bolts to aluminum channel hangers extending from brick posts. Fence boards shall be attached to framing members with aluminum rib-shanked nails or approved equal. Finish fence with a natural cedar tone sealer.</p> <p>D. Gate</p> <p>14-foot wide double swing. Horizontal bolt latch suitable for padlock. Vertical bolt latch into concrete base to fix one gate.</p> <p>E. Payment</p> <p>Payment shall be incidental to lift station costs.</p>	<p>45. BRICK POST WITH FOOTINGS</p> <p>A. General</p> <p>Scope: This section covers the furnishing of all labor, equipment, and materials to complete the unit masonry work as shown on the drawings and herein specified.</p> <p>B. Products</p> <p>1) Type #1 Face Brick</p> <p>a) Hollow units of burned clay or shale, ASTM C216 grade SW, Type FBS; modular size. The contractor shall provide brick sample to the engineer prior to ordering materials.</p> <p>2) Provide solids at corners of soldier courses and rowlock ends.</p>
<p>32. NOTICE TO SURETIES</p> <p>The final inspection and acceptance of the work shall not be binding or conclusive upon the City if it shall subsequently appear that the contractor has willfully or fraudulently supplied inferior apparatus, equipment, materials, or workmanship, or has departed from the terms of the contract documents. In such case, the City shall have the right notwithstanding such final acceptance and payment, to cause the work to be properly performed and satisfactory apparatus, equipment and materials supplied to such extent as in the opinion of the engineer, may be necessary to finish the work in accordance with the plans and specifications therefore at cost and expense of the contractor and the sureties on his bond, and shall have the right to recover against the contractor and his sureties the cost of such work together with such other damages as the owner may suffer because of the default of the contractor, the same as though such final acceptance and final payment had not been made.</p>				
<p>33. ENGINEER'S STATUS</p> <p>The engineer shall determine if the work is proceeding in accordance with the contract documents of the City. He has authority to stop the work whenever such stoppage may be necessary to ensure the proper execution of the contract.</p> <p>The engineer is, in the first instance the interpreter of the conditions of the contract, and the judge of their performance.</p> <p>34. ENGINEER'S DECISIONS</p> <p>The engineer shall, within a reasonable time, make decisions on all claims of the City or contractor, and on all other matters relating to the execution and progress of the work and the interpretation of the contract documents. The engineer's decision in matters relating to material and workmanship shall be final if within the terms of</p>				

CITY OF FARGO
ASSESSMENT PLAT

STORM SEWER, LIFT STATION
AND INCIDENTALS

IMPROVEMENT DISTRICT NO. 4903
FINAL PLANS

Mark H. Bittner
CITY ENGINEER
NOV., 1999

